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SIXTH SHOW NUMBER

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DETROIT

Automotive Daily News

CARS · SHOP EQUIPMENT · TRUCKS · AVIATION · PARTS · ACCESSORIES · TIRES

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Chicago Show Crowds 10 Per Cent. Under Last Year, But Special Exhibits Attract Increased Attention

MID-WEEK SALON ATTENDANCE DROP CUTS EARLY GAIN

Still Above 1931, With Sales Interest at High Level

Chicago, Feb. 4.—Chicago buyers of high priced custom body motor cars are demonstrating more interest in such creations than had been looked for in view of the general hesitancy to indulge in luxury buying, according to reports from the automobile salon now being held at the Drake Hotel.

The response at this show is declared by exhibitors to be surprising notwithstanding that attendance fell off yesterday to a level that almost wiped out the lead the salon had established over the one held here in the fall of 1930.

Little was added to the sales total of approximately $100,000 reported for the first three days. There has been no disappointment on that score since exhibiting companies had not counted upon normal business at the current event. At the same time they are getting all the orders in sight and feel that with confidence returning among the more wealthy, and general business conditions continuing to improve, the purchase of these custom body cars will be resumed normally.

There is agreement on the point that proper appreciation is being shown by likely buyers over the advanced style and mechanical im-

(Continued on Page 2)

JANUARY OUTPUT GAIN BY CADILLAC-LA SALLE

Chicago, Feb. 4.—Production of Cadillac and La Salle cars in January totaled 2,139 units, exceeding any previous January in the past several years with the exception of 1929, according to L. P. Fisher, president of Cadillac Motor Car Company. This is an increase of 502 cars over January of last year, and an increase of 614 cars over production of January, 1930, which amounted to 1,525 cars.

"The number of orders now actually on file at the factory assures an equally large and perhaps an even larger production during the present month of February, despite

(Continued on Page 4)

HUPP DEALERS HEAR 1932 PLANS; NEW SALES TACTICS NOW NEEDED

Chicago, Feb. 4.—The new Hupmobile models are the fulfillment of plans laid as far back as two years ago, according to Dubois Young, president and general manager of the Hupp Motor Car Corporation, who addressed 300 dealers, distributors and salesmen from Cook county and the Middle West at the annual show luncheon yesterday in the Stevens Hotel tower ballroom.

This meeting was one of 100 sec-

(Continued on Page 4)

CHRYSLER DEALERS URGED TO STRESS ADDED VALUE OF 1932 CARS

Chicago, Feb. 4.—How dealers conduct their business is the key to the results they will obtain in sales and profits this year. So stated J. W. Frazer, general sales manager of the Chrysler Sales Corporation, in a talk to more than 1,000 distributors, dealers and salesmen in the Gold Room of the Congress Hotel yesterday.

Frazer pointed to the importance of operation methods which he said must be on a profitable basis. In the matter of selling strategy he named two fundamentals which the sales forces must keep in mind in 1932. One is the desirability of

(Continued on Page 2)

NASH ELECTS BLISS TO DIRECTORS' BOARD

Kenosha, Wis., Feb. 4.—The election of C. H. Bliss, vice-president in charge of sales of the Nash Motors Company, to membership in the company's board of directors was

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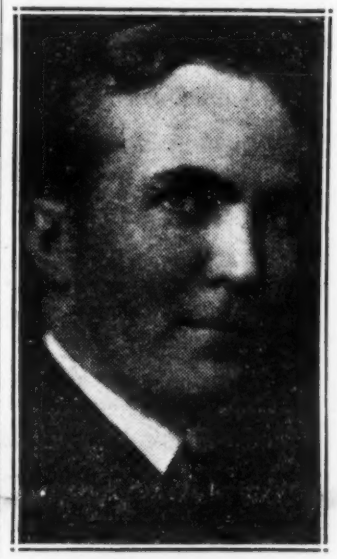
Who's Who, Why and Where at Chicago

To insure meeting the man you want to see at Chicago, be sure to get your free copy of "Who's Who at Chicago," published by Automotive Daily News.

This is the most complete and accurate list of men attending the show available, listing names, position in company and hotels at which they are staying. This complete directory is available at hotel news stands, at the Coliseum pressroom, at 333 North Michigan Ave., and all other places where Automotive Daily News is distributed.

PROMOTED BY NASH



C. H. BLISS, formerly sales manager of Nash Motors Company, Kenosha, Wis., whose promotion as vice-president in charge of sales is announced today

JOBBERS ORGANIZE ASSOCIATION FOR GREAT LAKES AREA

Suter Elected President of Regional Group Formed At Show

Chicago, Feb. 4.—A regional association to be known as the Great Lakes Automotive Wholesaler's Association was formed here by automotive wholesalers of Michigan, Eastern Wisconsin, Northern Illinois and Northern Indiana at a meeting at the Stevens Hotel under auspices of the Motor and Equipment Wholesalers' Association.

Officers elected were President F. H. Suter, Milwaukee; vice-president W. H. Craigie, Chicago, and secretary-treasurer A. V. Hall, Grand Rapids. Directors in addition to the officers are W. L. Niekamp, Terre Haute, Ind., and C. H. Shaw, Joliet, Ill.

The new regional association will be one of a nationwide group of similar organizations affiliated with

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MILLER DENIES WILLYS PRICE CUT IS CLEAN-UP MOVE; NO NEW MODELS

Chicago, Feb. 4.—Public refutation of two newly circulated rumors concerning Willy-Overland, Inc., was made by President L. A. Miller last night at the annual banquet attended by more than six hundred distributors and dealers in the Palmer House.

One of these rumors is a report to the effect that the present low prices of the company's 1932 cars

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FRANKLIN DEALER SHIPMENTS GAINED 33% FOR JANUARY

Chicago, Feb. 4.—Dealer shipments by the Franklin Automobile Company were 33 per cent. in January over the same month last year, it was announced yesterday at the company's show headquarters here.

It was also made known that December retail sales were 8 per cent. ahead of the corresponding month in 1930, and that Franklin obtained the highest percentage of the fine car business in its thirty-year history.

In December the company totaled more than 20 per cent. of all the fine cars registered in the United States, the announcement added.

BULLETIN

New York, Feb. 4.—R. L. Polk has just released the final figures for December sales, three states having been missing until today. This completes the sales statistics for 1932, except for minor corrections which may be made later. Total sales in December, 1931, were 77,553 passenger cars, comparing with 96,054 in December, 1930. .The total sales of passenuger cars for the year 1931 were 1,908,016, which compares with 2,626,068 for the year 1930.

WHERE TO GET AUTOMOTIVE DAILY NEWS DURING THE SHOW

Show issues of Automotive Daily News are available free to all trade visitors at the Chicago Show at hotel news stands, in the Press Room at the Coliseum at your own booth or dealer meeting or at Automotive Daily News headquarters, 333 North Michigan Ave., Phone Andover 2400.

DECREASE OFFSET BY IMPROVED TYPE INTEREST, BUYING

Reports From Many Other Points Bolstering Coliseum Record

Chicago, Feb. 4.—At headquarters of the Chicago National Automobile show in the Coliseum Thursday morning an estimate was given placing attendance at better than 145,000 for the first five days of the eight-day run. The return of seasonable weather so eagerly awaited by Manager S. A. Miles became a reality Wednesday and as a result the day's crowds were the largest by far since the show opened, approaching the fifty thousand mark.

The estimates on day-by-day at-

(Continued on Page 2)

50% AUBURN DEALER INCREASE REPORTED

Auburn, Ind., Feb. 4.—An increase of more than 52 per cent. in the dealer-distributor organization of the Auburn Automobile Company during the last year was reported today by N. E. McDarby, vice-president in charge of sales.

On February 1, 1932, Auburn had more than half again as many dealers as on the same date in 1931, he said.

"Increased strength in our dealer organization is reflected in the announcement that the last month has been the most successful January in Auburn history," he said. "The continued growth of our sales organization and the values which Auburn is offering indicate another record year in 1932."

WAYNE COUNTY SALES SHOW JANUARY GAINS

Detroit, Feb. 4.—The first returns on registrations of new cars in Wayne county, Michigan, for the month of January show some interesting gains in this key automotive center. Chevrolet and Hudson-Essex particularly have made big advances as compared with the same period in 1931.

Comparative figures on Ford are

(Continued on Page 4)

FOR SHOW VISITORS—Automotive Daily News: Editorial and Advertising Offices in Chicago, 333 No. Michigan Ave. Telephone, Andover 2400.

WARNING IS BROADCAST BY A.M.A. FEDERAL GAS TAX OF CENT IMMINENT

Washington, Feb. 4.—Opposition to the proposed levy by the Federal government of a 1-cent gasoline tax was voiced this week by the legislative committee of the American Motorists Association, in a warning broadcast to its affiliated clubs.

"Present indications are that Congress, under the guise of necessity of increasing the Federal government's revenue, will impose a 1-cent gasoline tax," the association's warning declares.

"A 1-cent Federal gasoline tax means an increase of 25 per cent. in the motorists' gasoline taxes, the average gasoline tax at present, imposed by the states, being 4 cents per gallon," J. Borton Weeks, president of the A. M. A., points out.

"Motorists would have no assurance that the Federal government would stop with a 1-cent tax. Once the Federal gasoline tax is imposed, it would be as difficult to get removed as it would be to have the present 4-cent average gasoline tax reduced. It is a safe prediction that the next move would be to increase the Federal tax to 2 or 3 cents.

"Motorists during 1931 paid a total of approximately $525,000,000 in gasoline taxes. Imposition of a 1-cent Federal tax would mean an added annual tax burden of $150,000,000, according to figures submitted to Congress by the United States Treasury Department."

ONLY 2 PER CENT. OF MOTOR TRUCKS HAUL INTERSTATE

By T. R. DAHL
Vice-president and secretary The White Company

The transportation of passengers by bus and the transportation of property by truck are entirely dissimilar services. In considering the Interstate Commerce Commission report of one of the examiners of the on co-ordination of motor transportation, this distinction between these two types of transportation must be clearly borne in mind.

Bus transportation, whether interstate or intrastate, is a common carrier operation. Bus transportation is a system of transportation similar in many respects to railroad transportation. The bus operators themselves have at all times desired interstate bus regulation by Congress. They have fought for the passage of such a bill through the last three sessions of Congress. The difficulty has been in obtaining legislation which was fair to bus operation. The National Grange and the Farm Bureau believe that bus operations should not be restricted because of alleged railway competition, as they desire that facility for the use of the people without restriction or taxation enacted for the protection of any other transportation agency. Interstate regulation of motor buses and a bill fair to that transportation agency will receive the support before Congress of the bus operators, manufacturers and others interested in the development of bus transportation.

The prime difficulty in intelligently discussing the regulation of motor trucks is that there has been so much misinformation concerning motor truck operation that the motor truck is entirely misunderstood. It is true that there is small reason for this misunderstanding, as the facts in reference to motor truck operation are well established by an impartial authority, namely, the Bureau of Public Roads of the United States Department of Agriculture. Before it is possible to consider what, if any, regulation should be enacted controlling the operation of motor trucks, it is necessary to understand that 82 per cent. of the motor trucks in this country by actual traffic count are privately owned and privately operated. This 82 per cent. of the motor trucks of the country are, therefore, in exactly the same class as private passenger cars, as they are only used by the owners of the trucks to transport their property over the public highway. Eleven per cent. of the motor trucks of the country are contract carriers, while but 7 per cent. of such trucks are common carriers. From a national standpoint it is interesting to know that but 2 per cent. of the motor trucks in this country today are engaged in interstate common carriage of property. Appreciating this ownership of motor trucks it is apparent that the motor trucks of the country cannot by any stretch of the imagination be considered a transportation system. They are, as a whole, units of private transportation.

It is a nice legal question whether it is possible to regulate the 11 per cent. of the motor trucks of the country which are today contract carriers. It seems to us that under the decisions of the Supreme Court of the United States such contract carriers cannot be regulated except under the police powers, which type of regulation is not contemplated in the report of the examiner. Theoretically the 7 per cent. common carrier motor trucks should be regulated and they are today regulated in about thirty-five states of the Union. They are regulated as a matter of law, but not as a matter of fact, as that law is just as difficult to enforce in the States as prohibition. Theoretically the 2 per cent. of motor trucks engaged in interstate commerce should be regulated as common carriers. It is a serious question whether it is worth building up an intricate system of interstate regulation affecting but 2 per cent. of the motor trucks of the country.

G. M. CUTS DIVIDEND TO 50 CENTS A SHARE

New York, Feb. 4.—With respect to the reduction in the common dividend rate from 75 cents to 50 cents, equivalent to from $3 to $2 per share, announced yesterday afternoon by General Motors directors, A. F. Sloan, Jr., president, said that the directors felt that, notwithstanding that the forecast for the current quarter, although uncertain at this early date, indicates earnings not greatly different from the corresponding period of a year ago, the fact that there is no definite improvement as yet indicated in the economic trend prompts a dividend disbursement in harmony with existing circumstances and conditions.

The prime importance of main-

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CHICAGO SHOW CROWDS TEN PER CENT. OFF, BUT SPECIAL EXHIBITS GAIN

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tendance are 20,000 for Saturday, 30,000 for Sunday, 22,000 for Monday, and 25,000 for Tuesday.

It is further stated that the crowds thus far at the current show have trailed those of last year by about 10 per cent. To offset this shrinkage there is satisfaction over the better type of interest and buying power represented by those who have viewed the new cars.

It is evident that despite the many other displays being held this week the public still appreciates the national show as the one annual opportunity to see and inspect every make of American automobile except Ford under one roof.

Special exhibits such as General Motors at the Stevens, Chrysler, Dodge, De Soto and Plymouth at the Congress; Willys-Overland at the Sherman, Graham at the Palmer House, De Vaux at the Auditorium, and others are outdrawing similar displays by the same companies on the average of 20 per cent., compared with last year. However, they are not considered competitive with the Coliseum show nor are they so intended by their sponsors.

Sales records being made here are having the expected effect of compelling factories in numerous instances to step up production schedules at the insistence of sales executives. Bolstering the records during Chicago show week are reports being received from many other points. Quite a few sales chiefs have adopted the expedient of wiring key cities and receiving reports from them, all of which have been announced as eminently gratifying.

GOOD YEAR REPORTED BY SPRINGFIELD, ILL., JOBBERS; LIKE OUTLOOK

Springfield, Ill., Feb. 4.—Automotive jobbers here enjoyed a very good year in 1931, and they are of the opinion that 1932 will be another good twelve months for them. One of the reasons advanced for the excellent business enjoyed is that the decrease in new car sales has produced a big market for replacement parts and maintenance labor. Old cars are being driven farther, thereby using more parts and labor than if the owners had traded them in on new cars.

The Central Auto Equipment Company, pioneer Springfield automotive jobber, was well satisfied with business for 1931, considering conditions as a whole.

The Springfield Auto Supply Company enjoyed an excellent year, at least ten of the months exceeding those of the year previous. William Menghini, manager, is optimistic over 1932.

Phil Stewart & Co. has just taken over the Automotive Electric Service Company, combining the businesses, and a banner year is expected from the combined organizations.

The Cave Auto Parts Company increased business over 1930, despite the fact that it moved during the year. This firm is showing real advancement in the jobbing line.

The S. M. W. Auto Supply Company, which also moved to a new location during the year, reports satisfaction with things at present.

SALON ATTENDANCE SHOWS MID-WEEK DROP

(Continued from Page 1)

provements which have been incorporated in the cars on display.

Exhibitors are not being deceived by the fact that the wealthy have considered it quite the fashion in many instances to retrench up to now, but believe they will shortly resume their more natural spending proclivities. Meanwhile, good lists for follow-up purposes have been compiled and sales forces intend to keep close to such prospects, pointing to finer values and in some instances reduced prices of the custom cars.

FORMICA DECLARES 12½C. DIVIDEND APRIL FIRST

Cincinnati, Feb. 4.—Formica Insulation Company reports for year ended December 31, 1931, net profit of $127,830 after charges and Federal taxes, equivalent to 71 cents a share on 180,000 no-par shares of capital stock. This compares with $294,065 or $1.63 a share in 1930. Net sales for 1931 were $1,731,247, against $2,309,828 in preceding year.

Current assets as of December 31 last totaled $647,659 and current liabilities $92,148, as contrasted with $992,289 and $137,430, respectively, at end of 1930. Formica Insulation Company declared a quarterly dividend of 12½ cents, placing the stock on a 50-cent annual basis, payable April 1 to stock of record March 15.

PHILADELPHIA DEALERS ORDER EARLIER SHIPMENTS

Philadelphia, Feb. 4.—The appeal of the new car models exhibited at the recent Philadelphia Automobile Show has not only stimulated local prospects to place orders in larger volume than last year, but also has resulted in stirring up dealer activity a whole month earlier than usual. Dealers who have been ordering shipments earlier will have an extra month of selling possibilities.

DOEHLER DIE CASTING ADDS 350 TO PAY ROLL

Toledo, O., Feb. 4.—Doehler Die Casting Company's plant here has added 350 workers, an increase of 100 per cent. during the last month, and is now working at 75 per cent. of capacity, due to larger schedules.

GIMBEL'S HAS OWN SHOW

Philadelphia, Feb. 4.—Gimbel Bros. department store is presenting its own "automobile show" in the sporting goods department. Here eleven new models, divided among the Austin, Chevrolet, Ford, Plymouth and Pontiac, are being exhibited.

SPARKS from The SHOW

The Show Improves
* * *
Praise for Cleveland
* * *
Olds Proud of Records
* * *
Honor for Fisher
* * *
Regrets to St. Paul
* * *

Chris Sinsabaugh—Detroit Editor

SINCE midweek there has been a noticeable change among exhibitors at the show and those who come to contact the industry as to the business possibilities. Whereas there was considerable disappointment over the attendance the first few days, reports come that sales are constantly improving, and it is predicted that Chicago will wind up in a most satisfactory manner.

I know of several instances where plans had been made to pack up and go home on Thursday, but because of improvements noticeable departure has been postponed. They tell me, too, that sales are getting better and better.

* * *

WHILE THE SPEECH Richard H. Grant, vice-president in charge of sales of General Motors, delivered at the Oldsmobile banquet was about the same as the one at Chevrolet, the dynamic talker departed from his Tuesday-night theme to hand a bouquet to Cleveland business men. He praised the enterprise of the Cleveland News in arranging for two giant parades participated in by 1,600 business men of the city, which preceded the opening of the show and which were followed by a civic luncheon at the Auditorium itself.

Grant declared the affair to have been most representative of the spirit of co-operation evinced by the business men, who believe, he says, that the pick-up of the automobile industry will speed up the return of the whole country to better business. It was because of this belief that the business men turned out to boost the show.

General Sales Manager J. T. Collins, who acted as toastmaster of the Oldsmobile dinner, repeated with considerable pride in the achievement that Oldsmobile had finished 1931 as first in its price class field of from $850 to $1,050 in which fifteen other makes were represented.

* * *

A NOTABLE FEATURE of this fight for business was recorded in the Chicago and Cook county area where Oldsmobile gained 25 per cent. in registrations, while the industry as a whole slumped 25 per cent.

"Our house is in order," declared Collins, speaking of the dealer situation as he told how the new found accuracy in business management is so helpful to his retailers.

* * *

HOMER M'KEE, head of the advertising agency handling Marmon's account, was in our midst this week, of course, and warming to enthusiasm over meeting so many of his old friends, he came across with one of his characteristic suggestions which promises to become an actuality. He proposes that the automobile industry honor Carl G. Fisher, founder of the Lincoln Highway, by erecting a statue of him at both ends of the national trail.

McKee is inspired to make this suggestion by the fact that he was with Fisher when the Hoosier first suggested the laying out of a highway that would stretch from coast to coast, and he was the first to hear Fisher name it in honor of the great Civil War president. Seeking a name, Fisher lit on Lincoln and it was McKee who handled the publicity in connection with launching the enterprise.

* * *

IT IS WITH REGRET that the column conductor has to decline the telegraphed invitation from Walter Cleland of the St. Paul Automobile Dealers, Inc., to attend its show which opens Saturday. We praise the promotional spirit shown, but we are told that we must hike back to Detroit as soon as possible because the golden tower of the Fisher building needs polishing. We'd like to go to St. Paul because we are told the city has a new auditorium and that its coming exhibition is expected to be the Northwest's greatest automobile show.

CHRYSLER DEALERS URGED TO STRESS ADDED VALUE OF 1932 CARS

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owning a new model because of advantages in features and low price, the other the need for replacing worn out automobiles on the streets and highways.

The speaker contended that the public is in the proper mood for this type of solicitation as evidenced by the enthusiasm of motorists at the show over the 1932 models.

J. E. Fields, president of Chrysler Sales Corporation, told the dealers they should be able to make the present models outsell those in the biggest year they have heretofore experienced. He stressed the unusual job the factory has done in its new design and the greater completeness of the line being produced.

Seattle Jobbers Note Upturn in Parts Sales

Pick-up Begun With New Year Expected to Be Accelerated Next Month; Many Owners Expected To Try to Make Old Cars Do Another Year

Seattle, Feb. 4.—An upturn in the parts field as well as in shop equipment has been noted in the Seattle district since the first of the year, although most of the jobbers do not expect anything exceptional until March. From then on, through the spring reconditioning season, the summer tourist peak, and right into the fall months, steadily increasing business is predicted for repair shops and service stations.

Some car owners will turn in their old cars for new ones; others will put some money into overhaul jobs, and thus escape monthly payments on new cars, using the same plan of paying on complete overhauls, while others will, of course, by force of circumstances, try to get along with the old "crate" until it breaks down. Then it may be junked, or it may be put in shape to run along a few more miles.

That the majority of car owners will try to make the old car do for another year is the most accepted opinion among parts jobbers. This is due to two things—car dealers are sick of overallowing on trade-ins, and so if the car owner does not get a fancy price for the old car on a trade, he will simply run it longer; second, many car owners, although they would like a new car, due to general economic conditions, will stay out of the new car market, probably for another year, the jobbers believe.

In this state generally business conditions are still quiet. However, in some phases the outlook is brighter. Abundance of moisture in the wheat belt of the Columbia basin practically assures a bumper crop. The fruit region also looks good, and there is some activity in a new industry that may be developed in the Gray Harbor and Olympic peninsula. That is oil.

The state has producing gas wells in Benton county, but not oil. Reports are of a small well having been developed near Aberdeen. At least, indications are favorable and oil may take the place of the fading lumber industry. In lumber there is nothing new, with business continuing slow. Outlook is for normal fishing conditions, and small crops, including poultry, are in good status.

Improvement in parts and shop equipment volume in January is noted by W. L. Strahl, manager of Ballou & Wright. "All signs indicate a very good parts volume for 1932 in the Northwest," he says.

"Necessity, regardless of any other consideration, will make many car owners go to the shops the next few months," declared E. C. Walling, sales manager for Ballou & Wright. "They will have to do it. Their cars demand attention and this means parts sales, too. After March I look for increased business at the shops, both dealer and independent. Already this tendency is evident, although shop work may be classed as spotty. Right after the first of the year there was a spurt, then it quieted down, but this will surge up again. The law of supply and demand will play its part."

Reporting more business since the first of the year in service parts, E. J. McCarthy, manager of P. J. Cronin Company, views the coming spring months with optimism. "The increased sales in our store the past thirty days can be interpreted as the first signs of the still further gains we may expect as the tourist season gets under way," he said.

Increased activity is reported in most repair shops, especially in the country districts of western Washington.

George F. Morrissey of Northwest Bearing and Parts Company is confident that the parts business will enter a very profitable and brisk stage early this spring, so that the first six months of 1932 will compare favorably with the banner years of 1929 and 1930.

"In fact," he said, "I fully expect to see the parts business surpass any year we have ever known. It is certain business will be better than it was during 1931, and I look for the repairman to be busier than he has ever been before. We will have a vastly better year than last year. This is based on the fact that so many cars have gone as far as they can without either a repair job, or else a trade-in. I think that more will be repaired than traded in for new cars.

"There will be more confidence this year on the part of many people. They will realize that their jobs are steady and especially will conditions improve as men go back to work as the year goes on. Many of these will not be far enough out of debt to warrant a new car. This class will use their first free money to fix up the old car."

The year opened big, is the report Mr. Morrissey shows. Shops were kept busy the first half of the month, and then there was a slowing up. "On the whole I look for January and February of this year to be about the equal of the same months of 1931," continued Mr. Morrissey. "In March we will start up, and the upturn will continue through the summer months and into the late fall. It is my prediction that the parts sales volume will beat last year by a wide margin."

Mr. Morrissey is known as a careful observer and an authority on things automotive. "A return of prosperity will come sooner in our industry than in any other," he said. "The automobile is so close to the individual that any improvement of the position of the individual will be quickly felt in our business."

D. A. Hoge, general manager of Hoge Piston and Ring Company, states the firm's machine shops are busier since the first of the year than in many months. This indicates motorists are already beginning to put cars in shape for the coming travel season. "The trend in the parts business is unquestionably upward," was his opinion.

"The $3 flat license fee now in effect in Washington has already proven a factor in getting cars out on the highways earlier. The cheap fee has shown its good effect by the record made in early applications for license plates."

The nail was hit pretty much on the head by C. F. Wright, president of Ballou & Wright, when he predicted that 1932 would be a better year for the "aggresive dealer." The qualifications for success for 1932 are no different than they have always been. "Good management means aggressive sales policy, watching expenses, good service to customers and careful credit policy."

That repairmen have learned the lesson of getting paid for what they do, or giving credit only where careful investigation shows it is merited, seems assured, and this will strike at the main fault the industry has had in the past. That it is sometimes more profitable to lose a job than to get it, is becoming known.

Features New Location

BROADCASTING
From West Roxbury
THE
New Location
OF THE
New Chevrolet Agency
UNDER
New Management
THE
Highland Chevrolet Co.
(an addition to the Highland Garage)
1790-94 Centre St. Parkway 0700
WEST ROXBURY
Service an Important Requisite
We fully realize that a competent service dept. is absolutely necessary to any automobile agency that intends to build up a satisfied patronage. In view of the fact that we have had a well established service dept. for the past years, independent of any automobile agency, we feel that we are sufficiently equipped to fill the wants of present and future Chevrolet owners.
24 HOUR SERVICE
REPAIRS ON ALL MAKES OF CARS—NEW CARS ON DISPLAY
Visit Our Showroom—Perhaps Our Appraisal Might Satisfy You
THE HIGHLAND CHEVROLET CO.
1790-94 CENTRE ST.——PARKWAY 0700
D. J. McDEVITT
SALES
CHEVROLET
E. X. McDEVITT
SERVICE

THE HIGHLAND CHEVROLET COMPANY 1790-94 Centre St., West Roxbury, Mass., is a new car dealer, also operating the Highland Garage at that location. Twenty-four-hour service for repairs on all makes of cars is offered customers through the Highland Garage, which has been doing a good business independent of any automobile agency for a number of years. A recent advertisement in the Boston Sunday papers featured the "new location of the new Chevrolet agency, under new management," with a striking illustration of a man at the microphone and the words at the top, "Broadcasting from West Roxbury . . ." D. J. McDevitt and E. X. McDevitt are the owners

CAR MAKERS AND RAILS BUYING STEEL

New York, Feb. 4.—Steel companies with the best operations are benefiting to a greater extent than others from automobile business, says the Iron Age. Expansion in electric refrigerator manufacturing has also aided one or two sheet mills. The automobile industry is expected to produce 175,000 cars in February, against about 140,000 for January.

If the Ford Motor Company gets into volume production before the end of this month the total will be raised. Though Ford has not yet placed large steel orders, some are expected within a few weeks. Steel has been bought for 40,000 Chevrolet bodies.

The railroad wage adjustment raises hopes that there will be an increase in purchases by the carriers. Some rails and repair material probably will be bought, but major programs are likely to be postponed until the last half of the year.

Great Opportunity Offers to Build Up Sales Force, Says Executive

Philadelphia, Feb. 4.—An unusual opportunity is offered at this time to the automobile distributor or dealer to build up an especially strong sales organization, according to William Teefy, president of the Teefy-Seltz Company, Inc., Auburn-Cord distributor, 1419 Spring Garden St.

"This," said Mr. Teefy, "is because of the very large number of real salesmen and competent former executives in the automobile and other fields who are daily applying for positions. Some of these men are of the highest character and acknowledged ability. Applicants of this class are constantly calling in person, writing or telephoning us, asking if we can soon place them. In such cases it is not the fault of these men that they are out of employment. Frequently the reason they are looking for positions is because the business with which they were connected has suddenly failed or been liquidated. Sometimes a hard-pressed business concern has been obliged to let out some of its best men in order to reduce expenses.

"The automobile dealer needing to strengthen his sales force may now make selections from men who have made real records selling automobiles, or other merchandise. University men, ex-bank cashiers, car salesmen, who have approximated $10,000 in a year from their selling efforts, are anxious to make connections. One man in the last-mentioned category told us he would be willing to accept a job paying only $15 to $20 a week, so urgent was his need to find work. And this man is a salesman from the soles of his feet to the top of his head and could make good with any concern. Some former salesmen have told us they would be willing to take a job washing cars if we had no other position open. Now and then some other automobile house will telephone us they have had a remarkably good man apply for a job, whom they could not place, and ask us if we can give him a position.

"Not only has this state of affairs been disclosed to us here, but this condition is said to be prevalent throughout the country.

"Not so long ago one heard numerous complaints from automobile dealers that it was extremely difficult to find a really good salesman. Conditions, as they now are, have changed all that.

"As a matter of fact, there is no reason why the dealer need be obliged to put up with poor or indifferent salesmanship when really expert salesmen, who know virtually every angle of the business, are eager to be employed."

Sells a Car Each Day to Chase the Depression Blues

"The man who sits down to worry about the depression," says H. E. Miller of the Miller Motor Mart, Allentown, Pa., "is using up a lot of valuable energy to no good purpose. If he could use this energy to develop business it would not only benefit him; it would be better for the trade at large. Moping around certainly will not attract customers; it will repel them."

Beginning in a very small way about ten years ago as a dealer in used cars, this concern has gradually expanded its business volume until today it occupies a large building and ranks as one of the foremost dealers in its territory, both in new and used automobiles. While the average dealer has been having considerable trouble in moving his stock of used cars, the Miller Motor Mart has been buying used cars in the open market for resale.

has been one of outstanding achieve-

Its record during the past year ment, all the more notable on account of the sales resistance encountered during this period.

"When you consider the fact that we handle a very small proportion of the lower priced cars," continued Mr. Miller, "you will realize that we have been keeping busy in our territory by selling a car a day."

"What is the secret?" he was asked. "Is it salesmanship or liberal allowances for used cars?"

"At any event," he replied, "we don't get the business by losing our profit on the trade-ins. Unlike some competitors, we refuse to do business when there is no profit in a deal, not to mention possible losses. We lose some sales to other dealers, but we are satisfied to lose them when we know that the dealer cannot possibly make a profit."

"How do you develop your prospect list?"

"Advertising mostly. We are consistent users of newspaper advertising, and always have been. It is the only form of advertising we use. Our prospects are developed in this manner and also from the many tips our friends are kind enough to pass along to us. Of course, when once we have a prospect on our list we don't forget about him. We keep a card index, and if a man is interested in a particular make of used car, we note that on the card. As soon as we have something suitable we arrange for a demonstration."

"Are your terms more liberal than those of other dealers?"

"No, we are not looking for business that must be financed beyond a reasonable length of time. Only yesterday we refused a sale that would have been ours providing the sale would have been financed over a period of eighteen months. There is too much grief and loss connected with these long-time contracts. We will not bother with them."

MACHINE TOOL MARKET OUTLOOK IS BRIGHTER

New York, Feb. 4.—"Makers and dealers in the machinery and machine tool industry are more cheerful as the new week gets under way," the American Machinist reports. The situation in the past week was relieved by automotive inquiries and orders, largely from the Ford organization, and by government inquiries and orders, these largely from Federal government sources.

"Most tool sellers expect February to be better than January, which, in its turn, will prove better than December, in most cases. The Sino-Japanese situation, the Reconstruction Finance Corporation and automobile shows are seen as factors in possible spring developments."

PACKARD OMITS DIVIDEND FOR FIRST 1932 QUARTER

Detroit, Feb. 4.—Packard Motor Car Company has omitted the dividend due at this time. In the previous three quarters, a dividend of 10 cents a share was paid. Company issued the following statement: "Consistent with its traditional policy of conservatism, and in spite of the fact that the company holds $13,750,000 cash and marketable securities, the board of directors decided to omit the dividend for the first quarter of 1932. The dividend policy in the future will depend upon earnings and general economic conditions."

CLASSIFIED ADVERTISEMENTS IN THE AUTOMOTIVE DAILY NEWS BRING RESULTS

Automotive Daily News

"Of, By and For the Entire Automotive Industry"

Published Every Day Except Sunday and Monday by
AUTOMOTIVE DAILY NEWS PUBLISHING CORPORATION,
350 Hudson St., New York, N. Y.
O. J. Elder, President. H. A. Tarantous, Vice-President, Alexander Johnston, Secretary.
Entered as second-class matter August 27, 1925, at the post office at New York, N. Y., under the Act of March 3, 1879
350 Hudson St., New York, N. Y. Telephone CA nal 6-1000

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To Other Countries, One Year, $15.00; two years, $26.00. Single copies, 5 cents.

FRIDAY, FEBRUARY 5, 1932

ADVERTISING AND BUSINESS HEADQUARTERS

Harry A. Tarantous, Business Manager. 350 Hudson St., New York, N. Y.
George M. Slocum, Manager Detroit Bureau, 427 Fisher Building, Detroit, Mich., phone Trinity 2-3500; Willard R. Cotton, Western Manager, 333 North Michigan Ave., Chicago, Ill., phono Andover 2400; Metz B. Hayes, New England Manager, Little Building, Boston, Mass.; Blanchard, Nichols & Coleman, American National Bank Building, San Francisco, Cal.; Lincoln Building, Los Angeles, Cal.; 1037 Henry Building, Seattle, Wash. Address ALL advertising and business correspondence to 350 Hudson St., New York city.

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350 Hudson St., New York, N. Y. Telephone CA nal 6-1000
Alexander Johnston, Editor. William C. Callahan, News Editor.
Statistical Department (registrations and specifications), P. J. Robas, statistician. Engineering Department, A. Benson Carleton, technical editor; Merchandising Department, Charles S. Zack, editor. Art Department, John Bauerfeld, director.
Detroit Bureau, Chris Sinsabaugh, editor, 427-8 Fisher Building, Detroit, Mich. Telephone Trinity 2-3500. Contributing editor, John C. Wetmore.

Trends in Advertising

SOME very interesting figures on automotive advertising expenditures have just been compiled by Dorrance, Sullivan & Co. These figures indicate trends in the type of advertising that is now being favored by our industry.

During January there was a drop of 34.8 per cent. in the automotive advertising appearing in national magazines, including farm papers of this type. This latter class suffered the greatest drop of all, losing 64.1 per cent during the month.

Radio advertising was not quite as strong, on the showing made during last December. This form of oral publicity dropped 3 per cent. below its level in 1930. This loss of 3 per cent. by radio advertising networks compares with a loss of 16 per cent. by the magazines during the year 1931.

On the other hand, newspaper advertising seems to be on the upgrade. During the New York show in January, there was an increase in automotive advertising to the extent of 23,249 lines.

Trends of this kind are interesting, because they indicate the type of advertising that has obviously showed the greatest strength in returns. And automobile dealers have undoubtedly been a factor in encouraging the drift toward newspaper advertising.

Our Position

"WHAT the safety pin is to Mahatma Gandhi, the automobile industry is to America." This graphic illustration was used recently in a speech by Walter W. Head, president of the Morris Plan Corporation. Mr. Head used this picturesque simile to emphasize the importance of our industry as a stimulating force for American business in general.

As a matter of fact, while heaven forbid that we should minimize the importance of a safety pin in Gandhi's make-up, the automotive industry holds a position of far more constructive potentiality than the pin. After all, the Mahatma's safety pin performs a purely static role in that gentleman's sartorial economy. The automotive industry not only holds our national industry together, but it contributes actively to the dressing up of business.

Our contribution to dozens of other industries makes the difference between profit and loss to many of them. The steel industry today is scanning the horizon for automotive orders as a basis for revival of its business. Rubber, glass, lead, copper and even lumber interests, are anxiously awaiting revival of automotive buying to set them on the pathway toward prosperity again.

So our only quarrel with Mr. Head's statement is that the safety pin, like Gandhi's garments, does no go far enough.

More Wage Adjustments

NOW that the railway workers and executives have ironed out the difficulties that beset the way to the adjustment of wages, perhaps we shall see similar action in other fields. One of the trades which has been brought to stagnation by excessive wages is the building industry. Plumbers, carpenters, plasteres, bricklayers, etc., have had nominal wages far above other similar classes of labor.

As a matter of fact, these wages have been just what we called them, "nominal," because these men have seldom had steady employment. The contention now is that if the unions will scale down the nominal wage rates, it will start building in sufficient volume for the men to earn more money.

At any rate, this is a situation that is worth careful consideration by the labor leaders who represent the men most vitally concerned.

Protests Tax

H. A. EGOLF

PEORIA, Ill., Feb. 4.—H. A. Egolf, Oldsmobile dealer here, has returned from Washington, D. C., where he appeared before a congressional committee to protest the readoption of the wartime excise tax on automobiles. He asserted the tax would retard industry and be an unwise discrimination. Mr. Egolf was delegated to represent General Motors dealers at the hearing by the National Automobile Chamber of Commerce

METROPOLITAN S. A. E. HOLDS COLOR SESSION

New York, Feb. 4.—The Metropolitan Section of the S. A. E. last night held an informal management conference in its Marketing Series. G. W. Kelsey of the Joseph Dixon Crucible Company was in the chair.

Miss Nan Hornbeck read a paper on "Glorifying Manufactured Products With Color." M. Rae Paul of the National Lead Company spoke on "Color: Its Selection and Specification."

The meeting was held in Room 1101, Engineering Societies Building, and was called to order at 8 o'clock.

SMITH & GREGORY, INC., REPORTS 100 PER CENT. GAIN

New York, Feb. 4.—Arthur E. Smith, president of Smith & Gregory of New York, Inc., reports that his organization showed an increase of 100 per cent. in total business during the month of January, 1932, as compared with January, 1931. Smith & Gregory operates two service stations for the installation, repair and maintenance of B. K. vacuum brakes, Bendix Westinghouse airbrakes, Bendix clutch controls, Timken trailer axles and other Bendix products.

COMING EVENTS

JANUARY

30-Feb. 6—**Washington, D. C.** Washington Automotive Trade Association, show.
30-Feb. 6—**Cleveland, Ohio.** Annual Automobile Show of the Cleveland Automobile Manufacturers and Dealers Association, Public Auditorium.
30-Feb. 6—**Chicago, Ill.** National Automobile Chamber of Commerce. National Automobile Show
30-Feb. 6—**Chicago, Ill.** Automobile Salon Hotel Drake.
30-Feb. 6—**Chicago.** National Automobile Dealers Association. Meeting.

FEBRUARY

1- 6—**Grand Rapids, Mich.** Show.
4- 6—**Springfield, Ill.** Annual Automobile Show. Springfield Automobile Dealers Association, State Arsenal.
6-13—**St. Paul.** Annual Automobile Show St. Paul Automobile Dealers, Inc.
7-13—**St. Louis.** Annual Automobile Show St. Louis Automobile Dealers Association. New Mart Building.
8-13—**Ottawa, Canada.** Show.
10-13—**Trenton, N. J.** Annual Automobile Show, Trenton Automobile Trade Association.
13-19—**Indianapolis, Ind.** Indianapolis Automobile Trade Association Show Earl G. Henry, Mgr.
13-20—**Kansas City, Mo.** Annual Automobile Show. Kansas City Motor Car Dealers' Association. American Royal Building.
13-20—**Los Angeles, Cal.** Automobile Salon Hotel Biltmore.
17-21—**Peoria, Ill.** Automobile Show.
21-25—**New Orleans, La.** Show.
22-27—**Des Moines, Ia.** Show.
22-March 5—**San Francisco, Cal.** Automobile Salon Palace Hotel
29-March 5—**Seattle, Wash.** Show.

MARCH

3- 5—**Gary, Ind.** Automotive Trade Association, annual show. A. H. Travers, chairman.

JANUARY OUTPUT GAIN BY CADILLAC-LA SALLE

(Continued from Page 1)

the smaller number of working days," Mr. Fisher said.

"Our outlook for the year is much brighter than the picture presented this time last year, not only because of the increased demand, but also because stocks, both used and new, in the hands of Cadillac dealers were lower on January 1 this year than they have been in many years past."

A full force has been employed at the Cadillac-La Salle plants in Detroit for more than two months, and many departments have been working three eight-hour shifts. Company has sufficient orders on hand to maintain a full pay roll force well into the spring months.

WAYNE COUNTY SALES SHOW JANUARY GAIN

(Continued from Page 1)

not given, as this company has not as yet put its new product on the market. Chevrolet registrations show the largest gain with 594 for 1932, as against 197 for 1931.

Hudson-Essex is second, with 300 registrations for the first month of this year, as compared with 154 for last year, a gain of 146 cars. Oldsmobile ranks next with 112, against 108 for 1931. Buick registered 106 cars for the month both this year and last. Graham registered 68, as compared with 35 for 1931; Plymouth 47, against 14, and Hupmobile 41, against 20. Very few showed any loss.

HUPP DEALERS HEAR 1932 PLANS; NEW SALES TACTICS NOW NEEDED

(Continued from Page 1)

tional gatherings being staged by the factory and various distributors for the wholesale and retail organizations throughout the country.

Rufus S. Cole, vice-president in charge of sales, predicted that the style and mechanical features of the new models are destined to produce an excellent sales record for the organization this year.

Other speakers were C. D. Hastings, chairman of the board, who traced the growth of Hupmobile and the evolution of its car design; Phil S. Hanna, editor of the Chicago Journal of Commerce, who delivered a scorching protest against Federal waste in a number of departments at Washington, and William B. Burrus, who discussed changed conditions and their call for a new art of salesmanship.

Frederick Dickinson, vice-president of Lennen & Mitchell, Inc., and prior to that director of Hupmobile advertising policies at the factory for sixteen years, was toastmaster.

TRU-LAY PUSH-PULL CONTROLS

NEW

The housing of the Tru-Lay Push-Pull Controls is similar in construction to the well-known Tru-Lay Brake Controls, of which over 4,000,000 are in use. The actuating member is an armored strand. The armored portion takes the compression . . . The strand portion carries the tension.

SIMPLIFY CHASSIS DESIGN

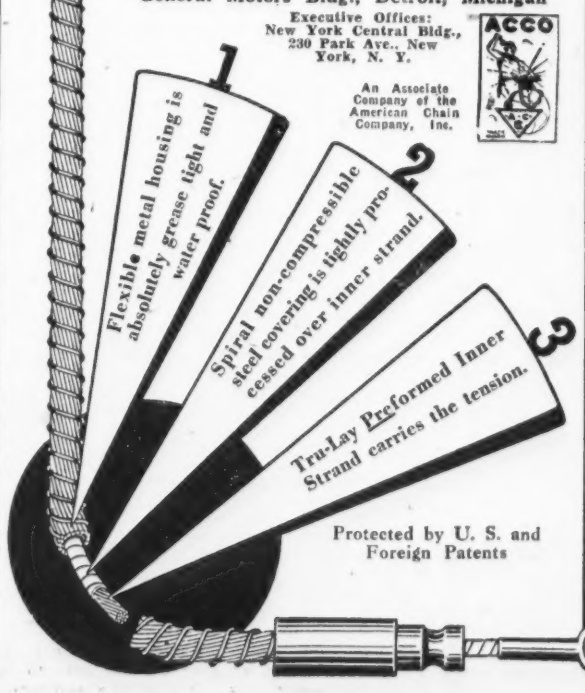
Tru-Lay Push-Pull Controls do away with elaborate control mechanisms for Free Wheeling, Shock Absorber, Brake and other manually operated controls. Rods, toggles, pins and cotters are eliminated. No adjustments are needed—variations are automatically taken up in the bend of the control. The armored strand slides in a bath of grease, good for the life of the car.

Let us furnish samples for test to your specifications.

AMERICAN CABLE COMPANY, Inc.
General Motors Bldg., Detroit, Michigan
Executive Offices:
New York Central Bldg., 230 Park Ave., New York, N. Y.

An Associate Company of the American Chain Company, Inc.

ACCO


1
Flexible metal housing is absolutely grease tight and water proof.
2
Spiral non-compressible steel covering is tightly processed over inner strand.
3
Tru-Lay Preformed Inner Strand carries the tension.

Protected by U. S. and Foreign Patents

Production--Engineering--Factory

Data on Shafts for Combined Torsion and Bending

Through the courtesy of the Link-Belt Company we are enabled to present to our readers the following data, including graph on shafts for combined torsion and bending, as applied to elevators and conveyors:

Head Shaft Sizes

In Chart B, P equals the turning effort, P_1 the equivalent pull necessary to operate the conveyor or elevator, while J and J_1 equal respectively the dead weights, including chains, buckets or flights hanging on the wheels.

The size of a shaft is determined from the largest pair of bending and torsional moments, either from between the bearings of the shaft, or at the projecting ends beyond the bearings, as shown by the table.

The length of the lever arm for figuring bending, should include one-third of the bearing length. After calculating and selecting the largest pair of bending and torsional moments, the shaft size is to be found at the intersection of those moment values in Chart B.

Shaft Strengths

The shaft sizes in the chart are based on an ultimate tensile strength of 62,500 pounds.

Working strain = 11350 when $\frac{M}{T} = \frac{1}{4}$ or less.

Working strain = 8750 when $\frac{M}{T} = 2$ or more.

Working strain is proportional for intermediate values of $\frac{M}{T}$.

Example

A conveyor has a 42-inch Head-Wheel spaced midway between Bearings 48 inches apart Center to Center. The chain pull is 5000 pounds.

The Bending Moment is $\frac{5000}{2} \times \frac{48}{2} = 60{,}000$ inch pounds. The Torsional Moment is 5000 $\times \frac{42}{2} = 105{,}000$ inch pounds. From the chart, the Shaft should be $4\frac{7}{16}$ inches Diameter.

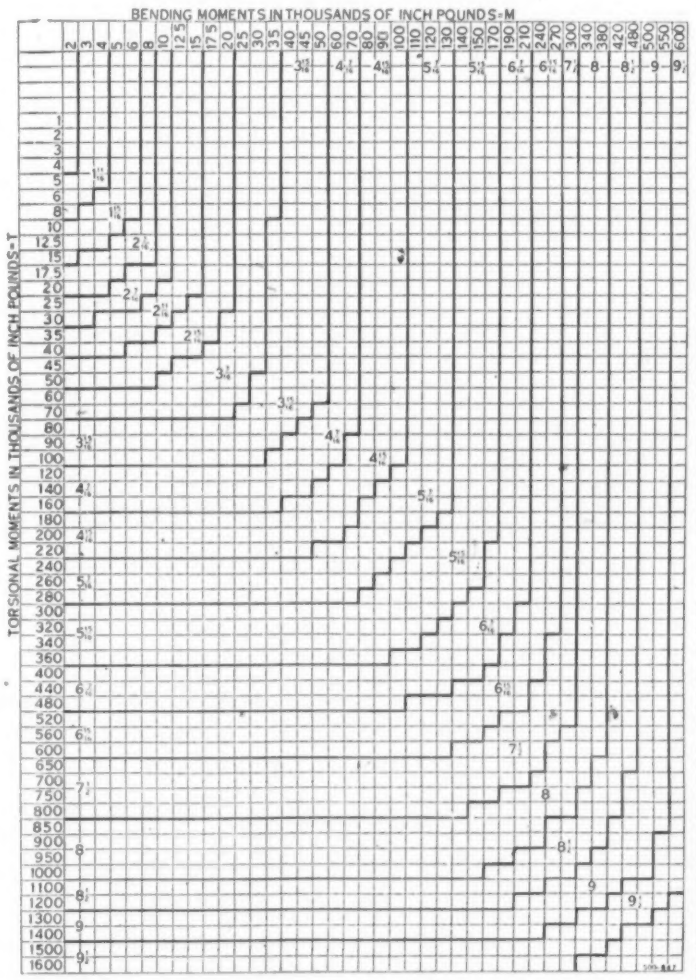
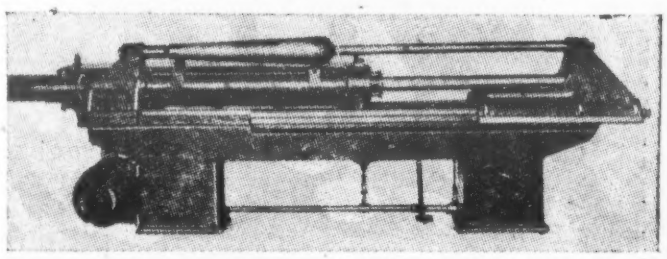


Chart "A". Easy Method of Shaft Selection. See Data.

	Single Strand		Double Strand	
	Bend. Moment	Tor. Moment	Bend. Moment	Tor. Moment
Wheel 1	$(P_1 + J_1)\ F$	$P_1 \times G$	$(P_1 + J_1)\ F$	$P_1 \times G$
Wheel 2	$\frac{(P + J)\ A \times C}{D}$	$P \times E$	$(\frac{1}{2}P + \frac{1}{2}J)\ A$	$P \times E$

Chart "B". Bending and Torsion Moment Formulae for Single or Double Strand Chain Conveyor or Elevator.

Muffler Assembling Machine By American Broach



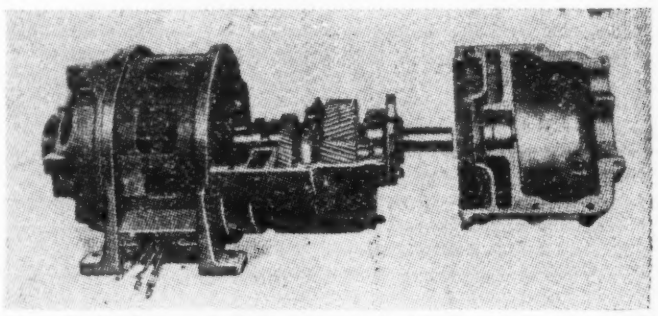
The American Broach & Machine Company, Ann Arbor, Mich., is now manufacturing a hydraulic assembly press designed for the purpose of putting mufflers together. In operation, pressure is applied to a foot pedal, which advances a slide actuated by a hydraulic cylinder on which the core of the muffler has been placed.

The muffler body is held on centering jacks. When the assembly is completed an auxiliary hydraulic cylinder comes into action and, applying an extra amount of pressure, flares the upset ends of the core into the muffler body. Upon releasing the pedal the slide returns and the muffler may be removed from the machine.

This machine is actuated by an American hydraulic-pressure pump, mounted in the rear of one of the pedestals. The pedestal itself is used as an oil reservoir. The two cylinders, one inside the other, give the action noted. As the high speed cylinder completes its stroke, it automatically throws in the auxiliary or larger cylinder to perform the flaring operation. The cycle of operation takes about twelve seconds.

This same company is also announcing a new machine for assembling rear axle drive pinion units in axle housings. This machine also is actuated by an American hydraulic pressure pump.

Westinghouse Puts Out Gearmotor Units



The Westinghouse Electric and Manufacturing Company, Pittsburgh, Pa., through its Nuttall Works is putting out speed reducers, combined with motors in a self-contained unit that is only a few inches longer than the motors themselves. These combinations save space, and they are also simple in installation and have fewer driven parts. The manufacturers state that they embody high efficiency in operation and simplify maintenance requirements.

This combination includes a Westinghouse CS general purpose induction motor with a double reduction, non-planetary, helical gear speed reducer. The combination is included in one frame. An improvement in the construction of the motor consists of a pre-wound primary core that is separable from the stator frame. This permits economy in operation and maintenance and makes possible rapid changes in motor speed, voltage and phase. These combinations are manufactured in sizes from ½ to 15 horse power, with a range of output speed from 69 to 1,550 r. p. m.

Engineers Concentrating On Better Brake Designs

"Right now," says J. H. VanHalteren, executive engineer of Motor Wheel Corporation, Lansing, Mich., "there is every evidence that brakes are receiving more attention on the part of the engineering fraternity than at any time since the introduction of four-wheel braking.

"In this respect brakes merely undergo the process that brought changes and betterments in other automobile units—in accordance with a sort of 'one-thing-leads-to-another' cycle. Improvements in roads fathered better tires. The perfection of balloon tires compelled changes in wheel mountings and steering mechanisms. Higher car speeds, the trend toward the use of heavier cars, and different driving standards, gave us four-wheel brakes.

"Today, with speeds still higher, traffic congestion growing, more numerous and faster stops, more and more responsibility is being put on the brakes. Free wheeling, now a generally accepted feature, is putting the brakes to additional extra taks certainly not foreseen when brakes appeared for the first time on all four wheels.

"Not only the motorists' convenience, but consideration of safety has for some time emphasized the need for a type of automobile brake that would not score, would need no reboring, but would continue to function satisfactorily, safely, over longer periods without the frequent servicing and adjustment that seemed to be accepted as unavoidable.

"The question of brake improvement is not new with Motor Wheel Corporation who are themselves large producers of the older forms of brake drums. Work on the problem was begun two years ago, with experiments that showed a surprising complexity of braking factors. The task soon narrowed down to the design of a brake drum combining the lightness and strength of steel with the recognized advantages of an iron braking surface.

"The perfection of the process of "centrifusing"—the spinning of fusing iron to steel by means of centrifugal force in special machines, paved the way for what is now known as the "Centrifuse" brake drum.

"Quite early in our experiments we found that the ideal brake drum was not a complete pressed-steel drum differing from the commonly used pressed-steel drum only in having an iron surface cast to its brake ring. One of the shortcomings of that drum type was that it could not be produced in the desired unifomity, and also that it did not readily rid itself of the heat generated in braking, heat being one of the major causes of drum distortion.

"Continued development work caused us to discard one-piece drums in favor of the drum known as the built-up or "tailor-made" centrifuse.

"This tailor-made construction makes it possible to produce centrifuse drums identical in diameter and width, yet totally different in their operation on the cars for which they are designed. In other words, the fact that the three elements of the drum—steel foundation ring, fused iron braking surface, and heat-dissipating joined back may be varied to suit widely varying sizes, braking loads and other conditions, gives them an unlimited performance range and field of usefulness."

PERFECT CIRCLE SALES FOR 1931 NEW RECORD

Hagerstown, Ind., Feb. 4.—Perfect Circle's 1931 piston ring sales were the largest in the company's twenty-five-year history. During the year just past sales increased 24 per cent. over the year 1930, even surpassing by a good margin the previous banner year, 1929.

In commenting upon the new sales record, Lothair Teetor, vice-president in charge of sales, gave his views as to the reason for his company's unusual performance. "First of all," Mr. Teetor pointed out, "we took steps early in 1931 to improve the quality of Perfect Circle piston rings, thereby giving the car owner more for his money than ever before. Second, we spent more money for advertising in 1931 than in any previous year, which enabled us to tell more people about our product than ever before. Third, our replacement sales profited from the fact that the average age of automobiles increased, thus necesitating better and more frequent overhauls."

New High Speed Milling Head by Neff Kohlbusch

Neff Kohlbusch & Bissell, Inc., Chicago, Ill., is placing on the market a new high speed milling head. This head gives speeds of 800, 1,400 and 2,400 r. p. m. It is driven by a ½-horsepower ball bearing motor, transmitting its power through a V-section endless molded belt and aluminum four-step pulleys.

A double pivot design is employed so that the spindle can be positioned at any angle and at any height within the two centers. This design allows using the cutter at a point below the regular spindle of the milling machine and also at a point practically flush with the bottom of the overarm. Accurately ground squaring surfaces are fitted parallel to the spindle to eliminate guesswork in operation.

The ground and lapped steel sleeve, which lines the housing along its full length, is carried on four bearings. These bearings are mounted to compensate for changes in spindle length through temperature variations. The collets are designed with a very small included angle to provide positive holding of the cutter. The collets are ⅜-inch maximum capacity.

Brackets to fit the operator's need are supplied for either circular or dovetail overarms. A safety switch is provided to make it impossible to apply the current to the motor when the spindle is locked.

The high speed head has a weight of fifty-six pounds. It can be used for rotary filing, as well as for milling.

Duluth Bankers Support Conservative Car Dealers

Duluth, Minn., Feb. 4.—One of the bright spots in the automotive business in the automobile dealer division at Duluth and its trading territory was revealed in interviews by Automotive Daily News with the leading and largest banks of Duluth, and that bright spot is that the dealer conducting his business along sound and conservative policies has the hearty support and enthusiastic approval of the Duluth banks that gave statements for publication regarding their attitude toward the automobile dealers.

This attitude toward the dealer is not only a credit to the bankers' profession, but it gives the Duluth dealer and those in Duluth's trading territory the best encouragement that they could hope for in a business cycle when they need it most of all. This attitude is expected to spur the better grade of dealers to greater sales action and as a result aid in an early revival of normal business conditions. No dealer need give up hope with this spirit of co-operation on the part of the bankers.

The attitude of the Duluth bankers toward automobile dealers and toward extending credit to dealers' organizations can be summed up as follows: Duluth bankers have always extended credit in the past, and it is their intention in the future to continue to extend credit to the local independent automobile dealers who have demonstrated that they are entitled to this credit because of their ability to manage their agencies along sound business principles and their ability to adjust themselves to present business conditions.

W. Gordon Hegardt, assistant vice-president of the First and American National Bank, issued the following statement to Automotive Daily News:

"We look favorably upon the paper of automobile financing corporations. We usually have in our portfolio a reasonable amount of this paper. We also have always extended credit in the past, and it is our intention in the future to continue to extend to the local independent automobile dealers who have demonstrated that they are entitled to this credit because of their ability to manage their agencies along sound business principles and their ability to adjust themselves to present business conditions.

"It is our belief that there will be a reasonable demand for automobiles this coming spring, but do not feel that this demand will show any large increase over the spring demand of a year ago. Business conditions in this territory are on as sound a basis as the conditions in any other section of the United States."

L. O. Anderson, assistant cashier of the Northern National Bank, said, "Our bank will continue to extend credit to automobile dealers who have demonstrated sound business policies in the past. This bank also favorably regards paper of automobile financing corporations. A demand for automobiles on the same volume as that of the 1931 spring season is looked for by this bank."

During the course of the interviews one of the bankers gave some suggestions as to how the weaker dealers may improve their credit standing at the banks and also how the manufacturer may help the dealers, both weak and strong, to improve their business.

"Cut down unwarranted overhead by eliminating expensive showrooms," he said. "Cut down expense by eliminating lazy people from the staff and make every employee a worthy worker in order that more business might be created. Watch trade-ins with an eagle eye and absolutely cut down losses from unwise trade-ins."

This last factor was stressed by this banker as perhaps the most important reason why not only the weaker dealer is in a financial muddle and calling for aid, but also the big reason the entire automotive industry is suffering. "Unless the automotive industry gets down to business and eliminates this agony of losses from trade-ins there is no telling what will happen," he said.

Dealers were urged to continue their business or, if they haven't started to do so, to conduct their business along sound conservative business policies.

As to how the manufacturer may help the dealer and incidentally help himself, one banker suggested a larger margin of profit for the dealer. He advocated elimination of the quota plan to permit the dealer to sell just the number of automobiles that his organization is capable of. This banker said that there was an improvement in the amount of co-operation that the manufacturer was giving the dealer, but not enough as yet to keep the dealer in business.

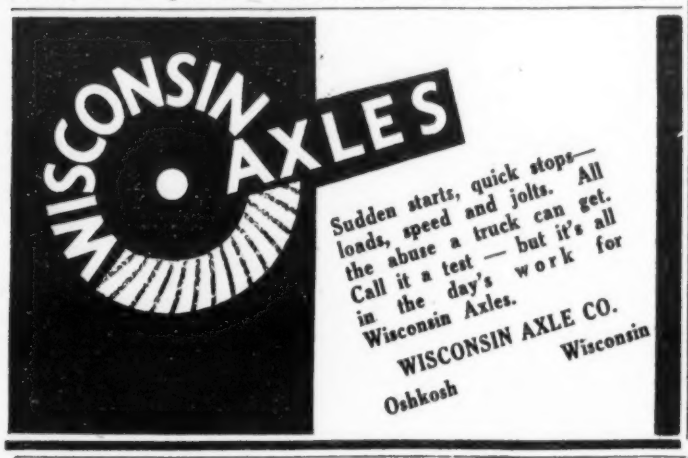
Business conditions in Duluth and its trading territory, which comprises a good portion of the Northwest, were reported by Duluth bankers to be on a sound basis, and even on a sounder basis than like sections in other parts of the United States.

A movement under way in Minnesota to create a larger market for potatoes and get a better price for the farmer is expected to aid agriculture and business. There is also a great deal of hope that the railroads will increase their pay rolls in their maintenance work this spring. There are also hopes that there will be a greater movement of iron ore, which will result in increased activities in Minnesota iron ore mines.

A heavier movement of freight by boat from the Duluth and Superior harbor is also a 1932 hope and possibility. Increased activities in the Duluth-Superior harbor means larger pay rolls. Every year the increasing tourist business brings more spending money for the automotive industry in the Minnesota arrowhead country, and has resulted in more retail outlets for automotive supplies.

Considering all the prospects, this section of the United States has every reason for looking forward to the future with great hope and a brighter outlook.

William Abraham, manager of the Duluth branch of the Commercial Credit Trust Company, reports that he looks for a pick-up in conditions. Mr. Abraham says that there has been a great deal of interest shown in the national shows, and that there should be a large number of replacement sales in 1932.


WISCONSIN AXLES
Sudden starts, quick stops—loads, speed and jolts. All the abuse a truck can get. Call it a test — but it's all in the day's work for Wisconsin Axles.
WISCONSIN AXLE CO.
Oshkosh
Wisconsin

Cumulative New Commercial Car Registration Statistics, December, 1931

Returns for today: Iowa and Kansas.

Figures in this table are from R. L. Polk & Co. of Detroit, with the exception of Illinois, which are supplied by the Robinson Advertising Service, Springfield, Ill., and New Jersey, which are furnished by the New Jersey Motor List Co., New Car Division., Trenton, N. J. Readers desiring county, city or town lists, or lists of owners in any given section, may obtain these by addressing any of these three companies. Some of this data has been published previously, but it is given here complete for the convenience of our subscribers.
In this table 47 states and the District of Columbia. **Comparative figures for December, 1930, will be found on Page 7.** **Commercial Car figures do not include busses.**

States	Autocar	Brockway-Indiana	Chevrolet	Diamond-T	Dodge	Federal	Ford	G. M. C.	International	La France-Republic	Mack	Pierce-Arrow	Reo	Sterling	Stewart	Studebaker	Whippet	White	Willys	Willys-Knight	Miscellaneous	Totals	States
Alabama			50	1	2	3	51	8	9	2	2		2	1		2		1			2	136	Alabama
Arizona			25		1		27															53	Arizona
Arkansas			9				2		1													12	Arkansas
California	10		168	1	51	4	377	27	27	4	5		24	2		15	1	8	5		39	768	Calif.
Colorado			18		2	1	62	2	4				1					4				94	Colorado
Connecticut	8	1	59	5	11	8	85	16	16	3	9	1	17	3	4	2		4	3		5	260	Conn.
Delaware	1		9		1		14	2	5				1									33	Delaware
Florida			184		12	2	261	5	23		1		11			1		1	1			502	Florida
Georgia			39				42	1	6		2					1					2	93	Georgia
Idaho			6		3		13						3						1			26	Idaho
Illinois		1	64	15	15	2	105	18	39		1		4		1	2			1		3	271	Illinois
Indiana		2	122	3	9	1	80	14	35				5		2	3			4		1	281	Indiana
Iowa			204	1	16	5	131	15	47		3		8			9		1	3			443	Iowa
Kansas			84		5	1	95	4	19				3						1		1	213	Kansas
Kentucky		2	103	4	3	1	86	7	35		3	1	11	1	1	3		3	1		7	272	Kentucky
Louisiana			37	1	8	1	66	2	18				1			2			1			137	Louisiana
Maine			26	1	4		25	3	3				4		1	6					1	74	Maine
Maryland	6	6	87	6	12	4	63	4	25				9			1	1	3	2	1	1	231	Md.
Mass'chusetts	3	3	76	5	21	4	171	30	17	1	8		14	2		3		1			4	363	Mass.
Michigan	1		189		25	12	224	21	47	2	2		27			12		1	2		5	570	Mich.
Minnesota			65	5	5	2	58	3	23				5			1			3		2	172	Minn.
Mississippi			26		1	1	3	4	6													41	Miss.
Missouri	1	1	117	4	11	1	140	17	34		1	1	12	1		5			4		8	358	Missouri
Montana			7				24		3									10	1			45	Montana
Nebraska			45		1	1	24	1	19							1		1	2			95	Nebraska
Nevada			3		9		6	3					1									22	Nevada
New Hamp.			8	2	1		10	1	1		2				2						1	28	N. Hamp.
New Jersey	7	3	164	6	33	20	157	23	33	2	8		14		5	1		4	1		33	514	N. Jersey
New Mexico			33		2		63											1				99	New Mex.
New York	23	13	307	13	66	15	326	40	63		30		32	1	12	7		25	3	3	26	1005	N. York
Nor. Carolina	1		142	2	15		123	9	16		4		2					2	1		5	322	Nor. Car.
North Dakota			3		1		4		4													12	N. Dakota
Ohio	9	11	288	8	50	5	373	54	95	1	7	1	21	3	10	7		13	27	1	47	1031	Ohio
Oklahoma			58		8	1	64	7	6		1		1			1						147	Okla.
Oregon			25		3		50	7	4									1			3	93	Oregon
Pennsylvania	35	23	501	17	152	17	639	73	170	4	43	2	59	7	34	24	2	23	26		52	1903	Penna.
Rhode Island	2		17		4	2	34	3	6				5		1	2		1				77	Rho. Isl.
So. Carolina			64		3	1	27	3	2	1	4					2						107	S. Ca'lina
S. Dakota			20		2		11		6							4			1			44	S. Dakota
Tennessee		1	54		5	7	46	6	19									1		1		140	Tenn.
Texas		1	326	2	10		275	10	45	2	1		3			7	1	11	1		3	698	Texas
Utah			8				14	3	1							1					2	29	Utah
Vermont			8		2		17	2	3				2						2			36	Vermont
Virginia	1	2	113	1	13	4	93	3	15	3	1		6			1		2			5	263	Virginia
Washington	2		89	5	14	2	232	12	26		6		11			12		9	3	1	24	448	Wash'ton
W. Virginia			66	1	10	1	54	8	20				6		1	3		2	7		7	186	West Va.
Wisconsin			77	2	9		57	7	19	1	1		3	1		7			5		11	200	Wis.
Dist. of Col.	1		37		3	3	58	25	1							1					1	130	D. of Col.
Totals	111	70	4230	111	634	132	4962	503	1016	26	145	6	328	22	74	149	5	133	112	7	301	13077	Totals

Early Improvement Expected By Dealers in Missouri Area

Joplin, Mo., Feb. 4.—Automobile dealers and heads of district motor car agencies in Joplin are virtually unanimous in their expressions of optimism concerning the outlook for the motor car industry and the promise of increased sales during the next few months of 1932.

A survey of the local situation in the last few days has revealed a great improvement in mental outlook for the year and a change in attitude toward prospects. Nearly all the dealers feel more encouraged over the possibilities of 1932 than they have for two years or more and regard the coming year as a lifesaver for their businesses.

Reaction of the motor public throughout the country to the initial automobile show in New York and subsequent local displays is responsible for the improved feeling among dealers. They look upon the response of motorists to the showings of new motor cars, the evident interest revealed in their response and the fact that motor car sales touched new levels in 1931 as prime factors for believing that 1932 can produce nothing but a change for the better.

Already many local dealers report increases in sales for January. Hundreds of prospects are listed on the books of motor car agencies in Joplin and surrounding towns. Many sales will be closed before March 1, and other prospects are scheduled for sales in April or May.

Local displays of the latest models of automobiles, with their hundreds of improved features, have attracted record crowds to the showrooms of the agencies, executives announced. At no time in the last two years has the interest been displayed that has been revealed in recent weeks.

Several Joplin agencies have not yet received the new models of the cars which they distribute, but in spite of that fact, the advertising, widespread publicity and illuminating literature which have made motorists acquainted with their 1932 creations have brought many advance sales.

Executives of the local concerns, which serve a wide territory in southwest Missouri, southeast Kansas, northwest Arkansas and northeast Oklahoma, are sure the response of crowds to the initial showings of new creations in the field of motorized vehicles is something more than a casual interest, a curiosity to see just what the automobile manufacturers have turned out this time.

The fact that a large percentage of the visitors to display rooms not only inspect the new models carefully, asking many questions about the mechanical innovations, the features designed to add comfort and service and the improvements in materials, but also insist upon appraisals of their used cars and information on prices and terms is considered a certain indication that the "buying fever" is coming up. Dealers remark also upon an increased interest this year among persons who do not now own motor cars. Low prices of the 1932 machines is responsible for attracting this new market, they believe.

The new creations of automotive engineers may be given credit for this welcome impetus to trading in motor marts, dealers here believe. As a proof of this contention, local dealers whose motor car products are due for no great change this year hold little optimism for the coming season. Nor has theri January business shown the gains which have encouraged other distributors to see 1932 as a good automobile year.

One local distributor is more than enthusiastic about his prospects. He pointed out that twenty times the number of visitors he had recorded a year ago passed through his display rooms in recent weeks to view the 1932 productions. Other dealere also reported far greater numbers of visitors than in recent years.

D. Miller, president of the D. Miller Motor Company, which handles Pontiac products in Joplin and the vicinity, said he felt better over the outlook for this year than he ever had before. Since the automobile show in New York and the reception of the new models here, there has been a considerable increase in sales and more activity in the automobile market than at any time for more than two years, he said.

Showrooms of the Miller Motor Company have been thronged each day since the initial display of the new products. Already there are enough "good" prospects on the lists to keep the salesmen busy for weeks, Miller reported.

Schaubert Motors, representatives of Packard motor cars for this district, reported that twelve advance sales were recorded by the middle of January, although the new Packards were not yet on the floor of the local agency.

'Exerything looks brighter!" W. A. Schaubert, president, exclaimed. "Packards are creating more inter-

(Continued on Page 11)

MILLER DENIES WILLYS PRICE CUT IS CLEAN-UP MOVE; NO NEW MODELS

(Continued from Page 1)

are in the nature of a clean-up to use materials otherwise obsolete, preparatory to the introduction of still newer models. The other rumor linked Willys-Overland with some unnamed company in a merger.

In spiking these reports President Miller characterized them as not only utterly false but malicious, and he added: "The success of our new cars might perhaps be expected to inspire stories from some sources that their low prices are for clean-up purposes. As a matter of fact these present models are a definite part of our 1932 program and we contemplate bringing out no new models.

"The other rumor just reaching me is that John N. Willys, C. O. Miniger and I are in Chicago for the purpose of arranging a merger with another company. This is equally untrue. We are just as independent today as we were twenty-five years ago.

"We have more than doubled our schedules in Toledo, and are working our forces full time on the models we are now producing and selling. Our reason for bringing out these cars at record low prices is that this is most certainly a price market."

In a brief talk to the assemblage Mr. Willys, who is United States ambassador to Poland and chairman of the board of the company bearing his name, pointed out that modern transportation methods are still paramount, as evidenced by the sale of more gasoline last year than ever before, and that the automobile outlook is favorable.

As the final speaker of the evening, N. A. Beardsley, general sales manager, introduced H. B. Harper, vice president in charge of sales. Mr. Harper cited the three essentials of 1932 dealer success as being a product priced properly and sold properly and a business run the same way as to neatness of establishment and personnel, together with strict attention to collection, parts, accessories, customer contact, used cars, service and businesslike dealings with bankers or finance companies. He referred to an honorable factory record of long standing with dealers in matters of contracts, schedules and service warranties as being more important than any type of signed agreement that could be written.

Performance Proves What Brockway Trucks Will Do

Brockway Trucks are built by a long-established, stably organized company — an organization with fifty-seven years of experience and progress, more than a score of which have been devoted to the exclusive building of high grade motor trucks.

A CHASSIS FOR EVERY HAULING REQUIREMENT

Brockway Motor Truck Corporation
Cortland, New York

Cumulative New Commercial Car Registration Statistics, December, 1930

This table is repeated for comparative purposes only, figures for December, 1931, will be found on Page 6.

States	Autocar	Brockway-Indiana	Chevrolet	Diamond-T	Dodge	Federal	Ford	G. M. C.	International	La France-Republic	Mack	Pierce-Arrow	Reo	Sterling	Stewart	Studebaker	Whippet	White	Willys	Willys-Knight	Miscellaneous	Totals	States
Alabama, '30		1	117		2	1	109	2	9							6		2		1		250	Ala., '30
Arizona, 1930			25		8		102	3	9						1	4			1		4	157	Ariz., '30
Arkansas, '30			6				9		2													17	Ark., '30
Cal., 1930	7	7	302	3	73	5	816	36	28	1	12		25	15	2	12	1	17	1	1	69	1433	Cal., 1930
Colorado, '30			25		8		75		3	1	1		1					1	2		2	119	Col., 1930
Conn., 1930	7	4	56		26	6	116	11	7		13		2			3		2	1		11	265	Ct., 1930
Delaware, '30		1	22				28	2	7						1							61	Del., 1930
Florida, 1930		1	179		15	1	430	2	20		2		3					8	2		2	665	Fla., '30
Georgia, '30	1		22			1	37	1	2		1							1			1	67	Ga., 1930
Idaho, 1930			24		2		40	1	4							1		1				73	Idaho, '30
Illinois, 1930	2	4	134	15	37	2	282	3	70		11		4	1			1	3	2		16	587	Ill., 1930
Indiana, 1930		5	96	2	14		143	6	15		1		1		3	5		2	1		7	301	Ind., '30
Iowa, 1930			346		47	1	394	11	79		7		17			18	2	1	6		11	940	Iowa, '30
Kansas, 1930			103		12		83		6							1			2		2	209	Kan., '30
Kentucky, '30		1	130	4	10	1	142	7	12		1		6			10		4	1		2	331	Ky., 1930
Louisiana, '30			40		9		60	2	13				2				2	2				130	La., 1930
Maine, 1930			17		5		17		1							1			1			42	Me., 1930
Maryland, '30	5	1	89	14	16	1	155	7	19		9		4			2		8	1		8	339	Md., 1930
Mass., 1930	3	4	96	4	35	4	258	17	19	1	9		13	6	1	15	1	13		1	4	504	Mass., '30
Michigan, '30	3	1	266	3	32	10	614	25	36	2			16			6	1	1	3		17	1036	Mich., '30
Minnesota, '30			105	2	11	1	159	1	23				3			3		1	4		9	322	Minn., '30
Mississippi, '30			62		1		57		7				1				1					129	Miss., '29
Missouri, '30	2	2	160	10	14	2	242	10	14	1	7		7			3	2	5	2	1	23	507	Mo., 1930
Montana, '30			3		2		8		5										1			19	Mont., '30
Nebraska, '30			88	3	7		96	7	17		1		1		1	7			1			229	Neb., '30
Nevada, 30			10		4		22	1	1				2					1				41	Nev., '30
N. Hamp., '30			24	1	1		23	1			1		1		1							53	N. H., '30
*N. Jersey, '30		1	34		15	1	78	5	7								1	4		1	6	153	N. J., '30
N. Mex., 1930			46	1	4		58	2	4				2									117	N. M., '30
New York, '30	8	21	473	27	127	6	494	22	50		25		28	3	32	16	3	31	4	4	28	1402	N. Y., '30
Nor. Car., '30		1	164		19		190	9	7				1			1	1	3	2		8	406	N. C., '30
N. Dakota, '30			7		1		14	2	5							1						30	N. D., '30
Ohio, 1930	6	9	435	11	87	6	787	46	99	4	16		18	3	10	23	9	26	10	7	58	1679	Ohio, '30
Okla., 1930		1	62	3	18	1	105	4	13				1						1			209	Okla., '30
Oregon, 1930			38		7	1	67	3					1						2		8	127	Ore., 1930
Penna., 1930	27	27	530	10	218	18	1086	44	134	10	46		32	21	17	36	3	29	15	1	66	2370	Pa., 1930
Rhode Isl., '30		1	16		6	2	47	1	7				6			1		1			2	90	R. I., '30
S. Ca'lina, '30		2	87		4		92	3	3												2	193	S. C. 1930
S. Dakota, '30			34	2	6		37	1	19				4			4			3		2	112	S. D., '30
Tennessee, '30		2	90		10	6	90	1	5		1		2			1	1		1		1	211	Tenn., '30
Texas, 1930		4	338		21		463	4	66	1	1		9			3	2	8	2		15	937	Tex., '30
Utah, 1930			15		3		36		1				1									56	Utah, 1930
Vermont, '30			12		1		19		7		1					1						41	Vt., 1930
Virginia, '30		2	135		12	2	138	10	17	3	1		2		3	2		3	2		6	338	Va., 1930
Wash'ton, '30			132		19	4	321	2	20		5		4			18	2	9	1	1	30	568	Wash., '30
West Va., '30		2	96	1	13	1	148	8	16	1			3		2	2	2	3	1		5	304	W. V., '30
Wisconsin, '30			73	4	18	4	145	3	22					8		1		1	4		10	293	Wis., 1930
D. of Col., '30			21	1	6	1	61	22	1		4		1	1		4		1			2	126	D. C., '30
Totals	71	105	5385	121	1006	89	8993	348	931	25	176		224	58	74	211	35	192	80	18	437	18579	Totals

*Two weeks report.

Major Specifications and Mechanical Details of 1932 Commercial Cars

Make and Model	Capacity—Tons or Lbs.	Chassis Price	Engine	Valve Arr'g'm't	No. of Cyls.	Bore and Stroke	Piston Disp.	Tax H. P.	Max. Brake H. P. and Peak R. P. M.	Type Camshaft Drive	Radiator Make	Clutch Make	Universals Make	Steering Gear Make	Carburetor Make	Fuel Feed Type	Make Electr'l System	Make Transmission	No. Spds. For.	Rear Axle Make	Rear Axle Type	Final Gear Reduction	Type Service Brakes	Area Service Brakes	Standard Wheel Base	Chassis Wgt.	Standard Tire Sizes Front	Standard Tire Sizes Rear
Am. La France Big Chief	6	6725	Own	L	6	4½x6	411.0	40.8	85@1800	—	—	Own	—	Ross	Zen	Vac	DR	Own	4	Own	2 R	32.8	W4IA	—	226	10600	40x8S	40x8DS
Austin	400	475	Own	L	4	2.2x3	45.6	7.8	13@3000	G	Hex	Rock	Spic	Own	Til	Gra	Aut	W-G	3	Sal	Sp	5.25	O4M	76.5	75	1210	3.75x18	3.75x18
Autocar A	1½-2	3200	Own	L	6	4 x4¾	358.0	38.4	82@2400	G	Per	Long	Spic	Ross	Str	Vac	DR	Own	4	Own	2 R	33 5	LO4ID	460	150	5300	34x7	34x7
Autocar D	2-2½	3500	Own	L	6	4 x4¾	358.0	38.4	82@2400	G	Per	Long	Spic	Ross	Str	Vac	DR	Own	4	Own	2 R	33 5	LO4ID	460	150	5600	34x7	34x7D
†Autocar SH	2½-3	4300	Own	L	6	4½x4¾	404.0	43.4	92@2400	G	Own	Long	Spic	Ross	Str	Gra	DR	Own	4	Own	2 R	44.0	O2IM	328	114	6770	34x7	34x7D
†Autocar SCH	2½-3	4300	Own	L	6	4½x4¾	404.0	43.4	92@2400	G	Own	Long	Spic	Ross	Str	Vac	DR	Own	4	Own	2 R	44.0	O2IM	328	157	6900	34x7	34x7D
†Autocar H	3	4100	Own	L	4	4½x5½	350.0	32.4	45@1450	G	Own	Long	Spic	Ross	Str	Gra	DR	Own	4	Own	2 R	48.6	O2IM	328	114	6770	34x7	34x7D
†Autocar HS	3	4600	Own	L	4	4½x5½	350.0	32.4	45@1450	G	Own	Long	Spic	Ross	Str	Gra	DR	Own	4	Own	2 R	54.3	O2IM	516	114	7600	40x8	40x8D
†Autocar HS	3-3½	4800	Own	L	6	4¼x4¾	404.0	43.4	92@2400	G	Own	Long	Spic	Ross	Str	Gra	DR	Own	4	Own	2 R	54.3	O2IM	516	114	8100	40x8	40x8D
†Autocar SHS	3-3½	4800	Own	L	6	4¼x4¾	404.0	43.4	92@2400	G	Own	Long	Spic	Ross	Str	Vac	DR	Own	4	Own	2 R	54 3	O2IM	516	157	8180	40x8	40x8D
Autocar SCHS	3-3½	4600	Own	L	6	4¼x4¾	404.0	43.4	92@2400	G	Own	Long	Spic	Ross	Str	Vac	DR	Own	4	Own	2 R	41.2	OL4IH	574	174	7990	36x8	36x8D
Autocar N	3-3½	5350	Own	L	6	4¼x4¾	404.0	43.4	92@2400	G	Own	Long	Spic	Ross	Str	Vac	DR	Own	12	Own	2 R	101 1	LO4ID	602	192	8900	36x8	36x8D
Autocar TFA	3½-5	6100	Own	L	6	4½x4¾	453.0	48.6	101@2400	G	Own	Long	Spic	Ross	Str	Vac	DR	Own	12	Own	2 R	101 3	LO4ID	602	192	9300	38x9	38x9D
Autocar TFA	3½-5	5500	Own	L	6	4½x4¾	453.0	48.6	101@2400	G	Own	Long	Spic	Ross	Str	Vac	DR	Own	4	Own	2 R	51.7	O2IM	516	172	9500	42x9	42x9D
Autocar C	7½	6800	Own	L	6	4½x4¾	453.0	48.6	101@2400	G	Own	Br-L	Spic	Ross	Str	Vac	DR	Br-L	7	Tim	Wo	94.0	LT4DV	674	173	11000	36x7S	40x8DS
Autocar F	7½	6800	Own	L	6	4½x4¾	453.0	48.6	101@2400	G	Own	Br-L	Spic	Ross	Str	Vac	DR	Br-L	7	Tim	Wo	100 0	T6I	720	171	13000	36x8	36x8D
*Autocar G	10	9000	Own	L	6	4½x4¾	453.0	48.6	101@2400	G	Own	Br-L	Spic	Ross	Str	Vac	DR	Br-L	7	Tim	Wo	100 0	T6I	720	171	13000	36x8	36x8D
Brockway 80	*8000	1295	Con	L	6	3⅜x4	214.7	27.3	61@3000	G	G & O	Borg	Spic	Ross	Zen	P	Aut	W-G	4	Tim	Sp	—	CB4IM	—	137	3800	6.00x20	6.00x20D
Brockway 90	9000	1525	Con	L	6	3⅜x4½	248.2	27.3	65@2700	G	G & O	Borg	Spic	Ross	Zen	P	Aut	W-G	4	Tim	Sp	20 9	CB4IM	292	149	4050	32x6	32x6
Brockway 120	12000	1990	Con	H	6	4 x4½	311.0	38.4	73@2400	G	G & O	Br-L	Spic	Ross	Zen	P	Aut	Br-L	4	Tim	Sp	31.3	L4IH	353	156	5400	32x6	32x6J
Brockway 140	14000	2495	Con	H	6	4 x4½	311.0	38.4	73@2400	G	G & O	Br-L	Spic	Ross	Zen	P	Aut	Br-L	4	Wis	2 R	35.3	L4IHV	356	156	6100	32x6	32x6D
Brockway 141	17000	2953	Con	H	6	4 x4½	311.0	38.4	73@2400	G	G & O	Br-L	Spic	Ross	Zen	P	Aut	Br-L	4	Wis	2 R	46.2	L4IHV	356	170	6500	32x6	32x6D
Brockway 150	17000	3169	Con	H	6	4½x4¾	380.9	40.8	89@2400	G	G & O	Br-L	Spic	Ross	Zen	P	Aut	Br-L	4	Wis	2 R	46.6	L4IHV	380	170	7100	32x6	32x6D
Brockway 175	17500	3660	Con	H	6	4⅝x4¾	427.5	45.9	100@2400	C	G & O	—	Spic	Ross	Zen	P	Aut	—	5	Wis	2 R	49.3	L4IHV	380	170	7200	34x7	34x7D
Brockway 195	19500	3820	Con	H	6	4½x4¾	380.9	40.8	89@2400	C	G & O	Br-L	Spic	Ross	Zen	P	Aut	Br-L	4	Wis	2 R	49.5	L4IHV	471	170	8100	34x7	34x7D
Brockway 220	22000	4540	Con	H	6	4⅝x4¾	427.5	45.9	100@2400	C	G & O	Br-L	Spic	Ross	Zen	P	Aut	Br-L	4	Wis	2 R	50.7	L4IHV	546	170	8400	36x8	36x8D
Brockway 250	25000	5950	Con	H	6	4⅝x4¾	427.5	45.9	100@2400	C	Long	Br-L	Spic	Ross	Zen	P	Aut	Br-L	4	Tim	Wo	63.7	LT4IVA	664	182	10000	40x8	40x8D
Brockway 290	30000	7250	Con	L	6	4¾x5¾	611.4	54.1	116@1800	C	Long	Br-L	Spic	Ross	Str	P	L-N	Br-L	7	Tim	Wo	95.0	T4IA	676	182	10750	38x7P	40x14S
*Brockway 640	40000	9700	Con	L	6	4¾x5¾	611.4	54.1	116@1800	C	Long	Br-L	Spic	Ross	Str	P	L-N	Br-L	7	Tim	Wo	96.9	T4IA	864	212	14000	38x7P	36x10S
Chevrolet	½	355	Own	H	6	3⅛x3¾	194.0	26.3	50@2600	G	Har	Own	Own	Own	Car	P	DR	Own	3	Own	Sp	13.6	O4IM	101	109	*1880	19x4.75	19x4.75
Chevrolet	1½	575	Own	H	6	3⅛x4¾	194.0	26.3	50@2600	G	Har	Own	Own	Own	Car	P	DR	Own	4	Own	Sp	13 4	O4IM	170	157	3015	30x5	30x5D
Chevrolet	1½	520	Own	H	6	3⅛x3¾	194.0	26.3	50@2600	G	Har	Own	Own	Own	Car	P	DR	Own	4	Own	Sp	33 4	——	—	131	2700	30x5	32x6
Commerce Series S 11	1	1600	Bud	L	6	3⅜x4½	241.6	27.3	53@2200	G	Long	Br-L	Blo	Han	Zen	Vac	Aut	Br-L	4	Col	Sp	25.5	L4IH	297	142	3900	30x5P	30x5P
Commerce Series S 11	1½	1900	Bud	L	6	3⅜x4½	241.6	27.3	53@2200	G	Long	Br-L	Blo	Han	Zen	Vac	Aut	Br-L	4	Tim	Sp	29.2	L4IH	297	162	4300	30x5P	30x5DP
Commerce Series 40	1½	2990	Bud	L	6	3¾x5	331.0	33.7	64@2100	G	Long	Ful	Blo	Han	Zen	Vac	Aut	Ful	4	Tim	Wo	34 8	L4IH	394	168	4700	34x5P	34x5DP
Commerce Series S 11	2	2030	Bud	L	6	3⅜x4½	241.6	27.3	53@2200	G	Long	Br-L	Blo	Han	Zen	Vac	Aut	Br-L	4	Tim	Sp	29.2	L4IH	297	162	4500	32x6P	32x6D
Commerce Series 40	2	3240	Bud	L	6	3¾x5	331.0	33.7	64@2100	G	Long	Ful	Blo	Han	Zen	Vac	Aut	Ful	4	Tim	Wo	34.8	L4IH	394	168	4900	36x6	36x6D
Commerce Series 40	2½	3240	Bud	L	6	3¾x5	331.0	33.7	64@2100	G	Long	Ful	Blo	Han	Zen	Vac	Aut	Ful	4	Tim	Wo	34 8	L4IH	394	168	5100	36x6P	36x6D
Commerce Series 60	2½	4580	Bud	L	6	4⅛x5⅛	410.9	40.8	83@2100	G	Long	Ful	Blo	Han	Zen	Vac	Aut	Ful	5	Tim	Wo	63.0	L4IH	584	175	7000	36x6P	36x6D
Commerce Series 60	3	4680	Bud	L	6	4⅛x5⅛	410.9	40.8	83@2100	G	Long	Ful	Blo	Han	Zen	Vac	Aut	Ful	5	Tim	Wo	63 0	L4IH	584	175	7100	36x6P	38x7D
Commerce Series 80	3½	5250	Bud	L	6	4⅛x5⅛	411.0	40.8	83@2100	G	Long	Own	Blo	Ross	Zen	Vac	Aut	Br-L	7	Tim	Wo	98.2	——	—	175	8200	36x6S	36x6S
Commerce Series 80	4	5330	Bud	L	6	4⅛x5⅛	411.0	40.8	83@2100	G	Long	Own	Blo	Ross	Zen	Vac	Aut	Br-L	7	Tim	Wo	98.2	——	—	175	8400	36x6S	36x14S
Commerce Series 100	5	5830	Bud	L	6	4⅛x5⅛	411.0	40.8	83@2100	G	Long	Own	1	Ross	Zen	Vac	Aut	Br-L	7	Tim	Wo	95.0	——	793	175	9600	36x6S	40x14S
Day Elder 60	1	895	Con	L	6	3⅜x4	214.7	27.3	61@3000	C	G & O	Borg	Spic	Ross	Zen	P	DR	W-G	4	Tim	Sp	36.3	L4IH	380	135	3300	20x6.00B	20x6.50DB
Day Elder 75	1½	945	Con	L	6	3⅜x4	214.7	27.3	61@3000	C	B & O	Borg	Spic	Ross	Zen	P	DR	W-G	4	Tim	Sp	36.3	L4IH	380	135	3400	20x6.00B	20x6.00DB
Day Elder 85	1½-2	1195	Con	L	6	3⅜x4⅝	248.3	27.3	65@2700	C	Fer	Borg	Spic	Ross	Zen	P	DR	W-G	4	Tim	Sp	42.3	L4IH	380	135	3850	20x6.00B	20x6.50DB
Day Elder 110	2	1825	Con	L	6	3⅜x4⅝	248.3	27.3	65@2700	C	Per	Br-L	Spic	Ross	Zen	P	DR	Br-L	4	Tim	Sp	44 9	L4IH	452	156	4880	20x7.00B	20x7.00DB
Day Elder 130	2½	2225	Con	H	6	4 x4⅛	311.0	38.4	73@2400	C	Per	Br-L	Spic	Ross	Zen	P	DR	Br-L	4	Tim	Sp	40.7	L4IH	578	157	6800	20x7.50B	20x7.50DB
Day Elder 160	3	2775	Con	H	6	4 x4½	339.3	38.4	82@2400	C	Per	Br-L	Spic	Ross	Zen	P	DR	Br-L	4	Tim	Wo	36.1	L4IH	659	156	6800	20x7.50B	20x9.00DB
Day Elder 200	4	3295	Con	H	6	4 x4½	339.3	38.4	82@2400	C	Per	Br-L	Spic	Ross	Zen	P	DR	Br-L	4	Tim	Wo	43.5	L4IHV	768	156	7600	20x9.00B	20x9.00DB
Day Elder 240	5	4295	Con	H	6	4⅜x4¾	427.5	45.9	100@2600	C	Per	Br-L	Blo	Ross	Zen	Vac	DR	Br-L	4	Tim	Wo	50.8	L4IHV	921	162	9500	38x9P	38x9DP
*Day Elder 285	8	5295	Con	H	6	4⅜x4¾	427.5	45.9	100@2600	C	Fer	Br-L	Blo	Ross	Zen	Vac	DR	Br-L	7	Tim	Wo	71.2	L6IHV	1192	164	12000	20x8.25B	20x8.25DB
*Day Elder 345	10	6395	Con	H	6	4⅜x4¾	427.5	45.9	100@2800	C	Per	Br-L	Blo	Ross	Zen	Vac	DR	Br-L	7	Tim	Wo	79 9	W6IA	1192	164	12500	20x9.00B	20x9.00DB
*Day Elder 402	12	7495	Con	L	6	4¾x5¾	611.4	54.2	127@2300	G	Per	Br-L	Blo	Ross	Zen	P	DR	Br-L	7	Tim	Wo	84.6	W6IA	1192	164	14800	20x9.75B	20x9.75DB
Diamond T 216 B	1½	795	Her	L	6	3⅜x4¼	228.0	27.3	56@2400	G	G & O	Borg	Spic	Ross	Zen	P	Aut	W-G	4	Cla	Sp	——	L4IH	252	135½	3260	20x6.50B	20x6.50B
Diamond T 316	2	1195	Her	L	6	3⅜x4¼	263.0	29.4	65@2400	G	G & O	Borg	Spic	Ross	Zen	P	Aut	W-G	4	Cla	Sp	——	L4IH	350	155	4400	20x6.50B	20x6.50DB
Diamond T 393 F	2-2½	1795	Her	L	6	3¾x4½	298.0	33.7	67@2400	G	G & O	Borg	Spic	Ross	Zen	P	Aut	Cov	4	Cla	Sp	——	L4IHV	350	159¾	5000	20x7.00B	20x7.00DB
Diamond T 551 B	2½-3	2395	Her	L	6	4 x4½	339.0	38.4	74@2400	G	G & O	Cov	Spic	Ross	Zen	P	Aut	Cov	4	Tim	Sp	——	L4IHV	408	168	5600	20x7.50B	20x7.50DB
Diamond T 303 F B	2-2½	2425	Her	L	6	4 x4½	339.0	38.4	74@2400	G	B & O	Cov	Spic	Ross	Zen	P	L-N	Cov	4	Cla	Sp	——	L4IHV	408	199	6100	20x7.50	20x7.50DB
Diamond T 504 A	3	2650	Her	L	6	4 x4½	339.0	38.4	74@2400	G	G & O	Cov	Spic	Ross	Zen	P	Aut	Cov	4	Wis	2 R	——	L4IHV	408	176½	6400	20x8.25B	20x8.25DB
Diamond T 506 A	3	2950	Her	L	6	4¼x4½	383.0	43.3	85@2200	G	G & O	Cov	Spic	Ross	Zen	P	L-N	Cov	5	Wis	2 R	——	L4IHV	408	184	6400	20x8.25B	20x8.25DB
Diamond T 603	3-4	3395	Her	L	6	4⅜x4¾	428.4	45.9	94@2200	G	G & O	Cov	Spic	Ross	Zen	P	Aut	Cov	5	Wis	2 R	——	L4IHV	499	169	7500	20x9.00B	20x9.00DB
Diamond T 606 B	3-4	3695	Her	L	6	4½x5¼	501.0	48.6	100@2200	G	G & O	Cov	Spic	Ross	Zen	P	L-N	Cov	5	Wis	2 R	——	L4IHV	499	187½	7500	20x9.00B	20x9.00DB
Diamond T 750	4-5	4925	Her	L	6	4⅜x5¼	529.0	51.4	114@2200	G	G & O	Cov	Spic	Ross	Zen	P	Aut	Cov	5	Wis	2 R	——	W4I	552	178	8300	22x9.75B	22x9.75DB
*Diamond T 801	4	4140	Her	L	6	4⅜x4¾	428.4	45.9	94@2200	G	G & O	Cov	Spic	Ross	Zen	P	Aut	Br-L	7	Tim	Wo	——	L6IHV	571	180½	8300	36x8P	36x8P
*Diamond T 1201	6	5600	Her	L	6	4½x5¼	501.0	48.6	100@2200	G	G & O	Cov	Spic	Blo	Ross	Zen	P	Aut	Br-L	7	Tim	Wo	——	W41A	238	190	11000	34x7P	34x7DP
*Diamond T 1602	8	6400	Her	L	6	4⅜x5¼	529.0	51.3	104@2400	G	G & O	Cov	Spic	Blo	Ross	Zen	P	Aut	Br-L	7	Tim	Wo	——	W41A	238	190	11700	36x8P	36x8DP
*Diamond T 1603	8	7500	Wak	L	6	5 x5¾	677.4	60.0	127@2000	G	G & O	Br-L	Spic-Blo	Ross	Zen	P	Aut	Br-L	7	Tim	Wo	——	W41A	238	194	12500	36x8P	36x8D
Dodge Bros. UF 10	½	375	Own	L	4	3⅜x4⅜	196.0	21.0	48@2800	G	Fed	Borg	Own	W-G	Car	P	DR	Own	3	Own	Sp	13.9	O4IH	121	109	1925	19x5.00	19x5.00
Dodge Bros. F 19	½	445	Own	L	6	3¼x4¼	211.5	25.3	66@3200	C	Fed	Borg	Un	W-G	Car	P	DR	Own	3	Own	Sp	13.9	O4IH	121	109	1975	19x5.25	19x5.25
Dodge Bros. U 1	¾	490	Own	L	4	3⅜x4⅜	196.0	21.0	45@2800	G	Fed	Borg	Spic	Han	Car	Vac	NE	Own	3	Own	Sp	19.2	O4IH	189	124	2260	20x6.00	20x6.00
Dodge Bros. DA 1	¾	595	Own	L	6	3⅜x3⅞	208.0	27.3	63@3200	C	Fed	Borg	Spic	Han	Zen	Vac	NE	Own	3	Own	Sp	19.2	O4IH	189	124	2360	20x6.00	20x6.00
Dodge Bros. U 1	1	495	Own	L	4	3⅜x4⅜	196.0	21.0	45@2800	C	Fed	Borg	Spic	Han	Car	Vac	NE	Own	4	Own	Sp	36.1	O4IH	206	133	2590	20x6.00	32x6
Dodge Bros. DA 1	1	595	Own	L	6	3⅜x3⅞	208.0	27.3	63@3200	C	Fed	Borg	Spic	Han	Zen	Vac	NE	Own	4	Own	Sp	33.4	O4IH	206	133	2690	20x6.00	32x6
Dodge Bros. UG 30	1½	525	Own	L	4	3⅜x4⅜	196.0	21.0	48@2800	C	Fed	Borg	Cle	Own	Car	P	DR	Mun	4	Own	Sp	36.9	O4IH	176	131	2290	6.00x20	32x6
Dodge Bros. UF 30	1½	595	Own	L	4	3⅜x4⅜	196.0	21.0	48@2800	G	Fed	Borg	Cle	W-G	Car	P	DR	Own	4	Own	Sp	37.1	O4IH	187	136	2581	20x6.00	32x6
Dodge Bros. UF 31	1½	670	Own	L	4	3⅜x4⅜	196.0	21.0	48@2800	G	Fed	Borg	Cle	W-G	Car	P	DR	Own	4	Own	Sp	37.1	O4IH	229	165	2757	20x6.00	32x6
Dodge Bros. F 30	1½	695	Own	L	6	3¼x4¼	211.5	25.3	66@3200	C	Fed	Borg	Cle	W-G	Car	P	DR	Own	4	Own	Sp	37.1	O4IH	187	136	2631	20x6.00	32x6
Dodge Bros. F 31	1½	770	Own	L	6	3¼x4¼	211.5	25.3	66@3200	C	Fed	Borg	Cle	W-G	Car	P	DR	Own	4	Own	Sp	37 1	O4IH	229	165	2807	20x6.00	32x6
Dodge Bros. F 35	1½	1425	Own	L	6	3⅜x3⅞	208.0	27.3	63@3200	C	Long	Borg	Cle	Han	Zen	P	DR	Own	4	Own	Sp	41.4	O4IH	311	140	3780	20x6.00	20x6.00D
Dodge Bros. F 36	1½	1485	Own	L	6	3⅜x3⅞	208.0	27.3	63@3200	C	Long	Borg	Cle	Han	Zen	P	DR	Own	4	Own	Sp	41.4	O4IH	311	165	3972	20x6.00	20x6.00D
*Dodge Bros. F 40	2	1995	Own	L	6	3⅝x5	309.6	31.5	96@3000	G	Long	Borg	Cle	Sag	DL	P	DR	Own	4	Own	Sp	43.7	O4IH	350	150	5273	20x6.50	20x6.50D
*Dodge Bros. F 41	2	2085	Own	L	6	3⅝x5	309.6	31.5	96@3000	G	Long	Borg	Cle	Sag	DL	P	DR	Own	4	Own	Sp	43.7	O4IH	350	165	5211	20x6.50	20x6.50D
Dodge Bros.	3	1515	Own	L	6	3⅜x4½	241.0	27.3	78@3000	C	Long	Borg	Un	Han	Zen	Vac	NE	Own	4	Own	Sp	46.3	O4IH	382	135	4235	32x6	32x6D
Dodge Bros.	3	1565	Own	L	6	3⅜x4½	241.0	27.3	78@3000	C	Long	Borg	Un	Han	Zen	Vac	NE	Own	4	Own	Sp	46.3	O4IH	382	165	4520	32x6	32x6D
Dodge Bros.	3	1615	Own	L	6	3⅜x4½	241.0	27.3	78@3000	C	Long	Borg	Un	Han	Zen	Vac	NE	Own	4	Own	Sp	46.3	O4IH	382	185	4715	32x6	32x6D
Dodge Bros. F 60	3	2645	Own	L	6	3⅝x5	309.6	31.5	96@3000	G	Long	Borg	Cle	Sag	DL	P	DR	Own	4	Own	2 R	56.6	O4IH	416	146	5543	32x6	32x6D
*Dodge Bros. F 61	3	2575	Own	L	6	3⅝x5	309.6	31.5	96@3000	G	Long	Borg	Cle	Sag	DL	P	DR	Own	4	Own	Sp	48 8	O4IH	416	170	5789	32x6	32x6D
*Dodge Bros. F 62	3	2695	Own	L	6	3⅝x5	309.6	31.5	96@3000	G	Long	Borg	Cle	Sag	DL	P	DR	Own	4	Own	Sp	48.8	O4IH	416	195	5901	32x6	32x6D
Essex Com.	¾	445	Own	L	6	2¾x4½	163.0	18.2	55@3300	C	Har	Own	Spic	Gem	Mar	Vac	Aut	Own	3	Own	Sp	5 40	4M	—	110½	1970	20x5	20x5.50
Federal D 2	*1½	795	Con	L	4	3⅞x4½	200.5	24.0	48@2500	C	Long	Borg	Spic	Gem	Zen	P	DR	W-G	4	Cla	Sp	40.8	L4IH	377	131	*3280	20x6.00	32x6
Federal E 2	*1½	895	Con	L	6	3⅜x4	215.0	27.3	60@2600	C	Long	Borg	Spic	Gem	Zen	P	DR	W-G	4	Cla	Sp	36 3	L4IH	377	132	7430	20x6.00	32x6
Federal F 7	*1¾	1525	Con	L	6	3⅜x4⅝	248.0	27.3	64@2500	C	Long	Borg	Spic	Gem	Zen	P	DR	Own	4	Tim	Sp	29 2	L4IH	414	132	3810	30x5	30x5D
Federal A 6	*2	1855	Con	L	6	3⅜x4⅝	248.0	27.3	64@2500	C	Long	Borg	Pet	Ross	Zen	Vac	DR	Own	4	Cla	Sp	38.5	L4IH	450	151	4635	32x6	32x6D
Federal A 6 T	*2½	2135	Con	L	6	3⅜x4⅝	248.0	27.3	64@2500	C	Long	Borg	Pet	Ross	Zen	Vac	DR	Own	4	Tim	Sp	47.1	L4IHV	659	151	5185	32x6	32x6D
Federal A 6 T W	*2½	2360	Con	L	6	3⅜x4⅝	248.0	27.3	64@2500	C	Long	Borg	Pet	Ross	Zen	Vac	DR	Own	4	Tim	Wo	52.8	L4IHV	659	151	5185	32x6	32x6D
*Federal D 2 S W	*2½-3	1050	Con	L	4	3⅞x4¼	200.5	24.0	48@2500	C	Long	Borg	Pet	Gem	Zen	P	DR	W-G	4	Cla	Sp	40.8	L6IH	566	140	3980	20x6.00	32x6
*Federal E 2 S W	*2½-3	1150	Con	L	6	3⅜x4	215.0	27.3	60@2600	C	Long	Borg	Pet	Gem	Zen	P	DR	W-G	4	Cla	Sp	40 8	L6IH	566	145	4030	20x6.00	32x6
*Federal D 2 D	*2½-3	1350	Con	L	4	3⅞x4¼	200.5	24.0	48@2500	C	Long	Borg	Pet	Gem	Zen	P	DR	W-G	4	Cla	Sp	40.8	L6IH	566	140	4235	20x6.00	32x6
*Federal E 2 D	*2½-3	1450	Con	L	6	3⅜x4	215.0	27.3	60@2600	C	Long	Borg	Pet	Gem	Zen	P	DR	W-G	4	Cla	Sp	40.8	L6IH	566	140	4310	20x6.00	32x6
Federal T 10 B	*2½-3	2740	Con	H	6	4 x4⅛	311.0	38.4	75@2200	C	Long	Borg	Pet	Ross	Zen	P	DR	Own	4	Tim	Sp	44 5	L4IHV	659	165	6645	34x7	34x7D
Federal T 10 W	*2½-3	2915	Con	H	6	4 x4⅛	311.0	38.4	75@2200	C	Long	Borg	Pet	Ross	Zen	P	DR	Own	4	Tim	Wo	44.0	L4IHV	659	165	6645	34x7	34x7D
Federal T 10 D R	*2½-3	2915	Con	H	6	4 x4⅛	311.0	38.4	75@2200	C	Long	Borg	Pet	Ross	Zen	P	DR	Own	4	Tim	2 R	45.6	L4IHV	659	165	6645	34x7	34x7D
Federal U 6	*3-3½	3860	Con	H	6	4 x4½	339.0	38.4	85@2200	C	Long	Borg	Pet	Ross	Str	P	DR	Br-L	7	Tim	Wo	64.6	L4IHV	676	165	7315	34x7	34x7D
Federal U 6 D R	*3-3½	3860	Con	H	6	4 x4½	339.0	38.4	85@2200	C	Long	Borg	Pet	Ross	Str	P	DR	Br-L	7	Tim	2 R	69 6	L4IHV	767	165	7315	34x7	34x7D
*Federal A 6 S W	*4	2360	Con	L	6	3⅜x4⅝	248.0	27.3	64@2500	C	Long	Borg	Pet	Ross	Zen	Vac	DR	Own	4	Cla	Sp	38.5	L6IHV	675	164	5620	32x6	32x6D
Federal C 7	5-6	4485	Con	H	6	4⅜x4¾	427.5	45.9	100@2200	C	Long	Borg	Pet	Han	Zen	P	DR	Br-L	7	Tim	2 R	75.2	L4IHV	921	195	9350	20x9.75	20x9.75D
Federal C 8	5-8	4895	Con	H	6	4⅜x4¾	427.5	45.9	100@2200	C	Long	Borg	Pet	Han	Zen	P	DR	Br-L	7	Tim	2 R	75.2	W4IA	921	195	9450	20x9.75	20x9.75D
Federal X 8	*7½	5085	Con	L	4	5 x6	471.0	40.0	61@1350	G	Long	Borg	Pet	Gem	Zen	Vac	AB	Br-L	7	Tim	Wo	110.9	T2IMV	603	162	9750	36x6S	40x14S
Federal X 8 D R	*7½	5085	Con	L	4	5 x6	471.0	40.0	61@1350	G	Long	Borg	Pet	Gem	Zen	Vac	AB	Br-L	7	Tim	2 R	106.0	T2IMV	603	162	9750	36x6S	40x14S
Federal X 8 R	*7½	5810	Con	H	6	4⅜x4¾	427.5	45.9	100@2200	C	Long	Borg	Pet	Gem	Zen	P	DR	Br-L	7	Tim	Wo	110.9	T2IMV	462	162	10625	40x8	40x8D
Federal X 8 R D R	*7½	5810	Con	H	6	4⅜x4¾

Major Specifications and Mechanical Details of 1932 Commercial Cars

(CONTINUED FROM PAGE 8)

Make and Model	Capacity—Tons or Lbs.	Chassis Price	Engine	Valve Arr'g'm't	No. of Cyls.	Bore and Stroke	Piston Disp.	Tax H. P.	Max. Brake H. P. and Peak R. P. M.	Type Camshaft Drive	Radiator Make	Clutch Make	Universals Make	Steering Gear Make	Carburetor Make	Fuel Feed Type	Make Electr'l System	Transmission Make	No. Spds. For.	Rear Axle Make	Rear Axle Type	Final Drive	Final Gear Reduction	Type Service Brakes	Area Service Brakes	Standard Wheel Base	Chassis Wgt.	Standard Tire Sizes Front	Standard Tire Sizes Rear
General Motors T-45	*16000	1990	Own	H	6	3⅛x4⅝	257.5	28.3	76@2500	G	Long	Own	Spic	Sag	Mar	P	DR	Own	4	Own	2R	50.7	B4IM	524	141	5050	32x6P	32x6DP
General Motors T-51	*19000	2565	Own	H	6	3¾x5	331.4	33.7	94@2500	G	Long	Own	Spic	Sag	Mar	P	DR	Own	4	Own	Sp	40.6	B4IM	574	155	5955	34x7P	34x7DP
General Motors T-55	*19000	2690	Own	H	6	3¾x5	331.4	33.7	94@2500	G	Long	Own	Spic	Sag	Mar	P	DR	Own	4	Own	2R	49.8	B4IM	574	155	6095	34x7P	34x7DP
General Motors T-60	*22000	3035	Buick	H	6	3¾x5	331.4	33.7	94@2500	G	Long	Own	Spic	Sag	Mar	P	DR	Own	4	Own	Wo	52.5	B4IM	685	154	6925	34x7P	34x7DP
General Motors T-61	*22000	3445	Own	H	6	3¾x5	331.4	33.7	94@2500	G	Long	Own	Spic	Sag	Str	P	DR	Own	4	Own	Wo	52.5	B4IMV	685	154	6965	20x9.00B	20x9.00DB
General Motors T-82	*24000	3795	Own	H	6	3¾x5	331.4	33.7	94@2500	G	Long	Own	Pet	Sag	Str	P	DR	Own	12	Own	Wo	142.5	B4IM	793	155	7500	20x9.00B	20x9.00DB
General Motors T-83	*24000	3990	Own	H	6	3¾x5	331.4	33.7	94@2500	G	Long	Own	Spic	Sag	Str	P	DR	Own	12	Own	Wo	142.5	B4IMV	865	155	7670	20x9.00B	20x9.00DB
General Motors T-85	*30000	5600	Own	H	6	4¼x5½	468.0	43.3	115@2100	C	Long	Own	Spic	Sag	Str	P	DR	Own	4	Own	2R	53.3	B4IMV	865	171	10630	20x9.75B	20x9.75DB
†General Motors T-90	*28000	5285	Own	H	6	3¾x5	331.4	33.7	94@2500	G	Long	Own	Pet	Sag	Str	P	DR	Own	12	Own	Wo	129.0	BrIA	868	185	9400	20x7.50B	20x7.50DB
†General Motors T-95	*40000	7545	Own	H	6	4¼x5½	468.0	43.3	115@2100	C	Long	Own	Spic	Sag	Str	P	DR	Own	4	Own	Wo	53.3	B6IA	1191	189	13250	34x7P	34x7DP
†General Motors T-96	*34000	7195	Own	H	6	4¼x5½	468.0	43.3	115@2100	C	Long	Own	Spic	Sag	Str	P	DR	Own	4	Own	2R	51.1	B6IA	1191	189	12850	34x7P	34x7DP
Gramm A X 4	1	795	Con	L	4	3⅞x4	200.4	24.0	50@2800	C	Per	Jon	Blo	Ross	Til	P	Aut	W-G	4	Tim	Sp	36.3	L4IH	380	131	*3300	20x6.00	20x6.50
Gramm A X 6	1	895	Con	L	6	3⅜x4	214.0	27.3	61@3000	C	Per	Jon	Blo	Ross	Til	P	Aut	W-G	4	Tim	Sp	36.3	L4TH	380	131	3550	20x6.00	20x6.50
Gramm B X 4	1½	895	Con	L	4	3⅞x4¼	200.4	24.0	50@2800	C	Per	Jon	Blo	Ross	Til	P	Aut	W-G	4	Tim	Sp	36.3	L4IH	380	131	3475	20x6.00	20x6.00D
Gramm B X 6	1½	995	Con	L	6	3⅜x4	214.7	27.3	61@3000	C	Per	Jon	Blo	Ross	Til	P	Aut	W-G	4	Tim	Sp	36.3	L4IH	380	131	3725	20x6.00	20x6.00D
Gramm B Z	1½	995	Own	L	6	3¼x3⅞	193.0	25.3	65@3400	C	Per	Own	Blo	Ross	Til	P	Aut	W-G	4	Tim	Sp	39.6	L4IH	380	131	3500	6.00x20	32x6S
Gramm B	1¾	1495	Lyc	L	6	3¼x4½	224.0	25.3	61@2900	G	Per	Own	Blo	Ross	Zen	Vac	Aut	Cov	4	Tim	Sp	34.3	L4IH	278	140	4150	20x6.50	20.6.50D
†Gramm C X 4	2	1095	Con	L	4	4¼x4¼	227.0	27.2	55@2600	G	Per	Jon	Blo	Ross	Til	P	Aut	W-G	4	Tim	Sp	37.0	L4IH	452	131	3900	20x6.50	20.6.50D
Gramm C X 6	2	1295	Con	L	6	3⅜x4⅜	248.2	27.3	70@3000	C	Per	Jon	Blo	Ross	Til	P	Aut	W-G	4	Tim	Sp	37.0	L4IH	452	131	4150	20x6.50	20x6.50D
Gramm C	2	1795	Lyc	L	6	3⅝x4½	278.6	31.5	82@2600	G	Per	Own	Blo	Ross	Zen	P	Aut	Cov	4	Tim	Sp	31.0	L4IH	353	160	4800	20x7.00	20x7.00D
Gramm C F	2½	1895	Lyc	L	6	3¾x4½	299.0	33.7	85@2800	G	Per	Br-L	Blo	Ross	Til	P	Aut	Br-L	4	Tim	Sp	38.2	L4IH	353	160	4900	20x7.50	20x7.50D
Gramm D	2½	1995	Lyc	L	6	3¾x4½	299.0	33.7	90@2200	G	Per	Jon	Blo	Ross	Zen	P	Aut	Cov	4	Tim	Sp	33.0	L4IHV	339	160	5200	20x7.50	20x7.50D
Gramm E	3	2595	Lyc	L	6	3⅞x5	353.8	36.0	90@2200	G	Per	Own	Blo	Ross	Zen	P	Aut	Cov	4	Tim	Sp	35.0	L4IHV	659	160	5950	20x8.25	20x8.25D
Gramm E Y	3	3595	Con	H	6	4¼x4¾	380.8	40.8	90@2200	C	Per	Ful	Blo	Ross	Zen	P	Aut	Cov	4	Tim	Sp	30.0	L41HA	—	190	7200	20x7.50	20x7.50D
Gramm G	4	3695	Con	H	6	4⅜x4¾	428.4	45.9	100@2200	C	Per	Br-L	Blo	Ross	Zen	P	Aut	Br-L	4	Wis	2 R	49.5	L41HV	768	160	8200	20x9.00	20x9.00
Gramm G Y	4	4345	Con	H	6	4⅜x4¾	428.4	45.9	100@2200	C	Per	Ful	Blo	Ross	Zen	P	Aut	Cov	4	Wis	2R	28.0	BW41M	736	210	7700	20x8.25	20x8.25D
Gramm G W	5	5175	Con	H	6	4⅜x4¾	428.4	45.9	100@2200	C	Per	Br-L	Blo	Ross	Zen	P	Aut	Br-L	4	Wis	2R	—	41A	864	157	9500	20x9.00	20x9.00D
Gramm H Y	5	6545	Con	L	6	4¾x5¾	611.4	54.1	127@2300	G	Per	Ful	Blo	Ross	Zen	P	Aut	Ful	4	Wis	2R	25.2	41A	996	236	10100	20x9.00	20x9.00
Indiana 64	6500	1195	Con	L	6	3⅜x4⅜	248.2	27.3	65@2700	C	Long	Borg	Spic	Ross	Str	Vac	Aut	Br-L	3	Col	Sp	21.3	C4IM	244	137	*3400	30x5	30x5
Indiana 74	7500	1290	Con	L	6	3⅜x4⅝	248.2	27.3	65@2700	C	Long	Borg	Spic	Ross	Str	Vac	Aut	Br-L	4	Col	Sp	25.6	C4IM	190	137	3450	32x6	32x6
Indiana 89	9000	1535	Con	L	6	3⅜x4⅝	248.2	27.3	65@2700	C	Long	Borg	Spic	Ross	Str	Vac	Aut	Br-L	4	Col	Sp	20.9	C4IM	292	149	4050	32x6	32x6
Indiana 111 XW	12500	1850	Her	L	4	4 x5	251.3	25.6	46@2000	G	McC	Borg	Spic	Ross	Str	Vac	Aut	Br-L	4	Wis	2R	35.2	K2IM	270	120	3740	32x6	32x6D
Indiana 120	12000	1990	Con	H	6	4 x4⅛	318.0	38.4	73@2400	C	G &O	Br-L	Spic	Ross	Str	P	Aut	Br-L	4	Tim	Sp	31.3	L4IH	353	156	5400	32x6	32x6D
Indiana 140	14000	2495	Con	H	6	4 x4⅛	311.0	38.4	73@2400	C	G &O	Br-L	Spic	Ross	Str	P	Aut	Br-L	4	Wis	2R	35.3	L4IHV	356	156	6100	32x6	32x6D
Indiana 141	17000	2935	Con	H	6	4 x4⅛	311.0	38.4	73@2400	C	G &O	Br-L	Spic	Ross	Str	P	Aut	Br-L	4	Wis	2R	46.2	L4IHV	380	170	6500	32x6	32x6D
Indiana 170	17000	3160	Con	H	6	4⅛x4¾	380.9	40.8	89@2400	C	G &O	Br-L	Spic	Ross	Str	P	Aut	Br-L	4	Wis	2R	46.6	L4IHV	380	170	7100	32x6	32x6D
Indiana 175	17500	3660	Con	H	6	4⅜x4¾	427.5	45.9	100@2400	C	G &O	—	Spic	Ross	Str	P	Aut	—	5	Wis	2R	45.3	L4IHV	380	170	7200	34x7	34x7D
Indiana 195	19500	3820	Con	H	6	4⅛x4¾	380.9	40.8	89@2400	C	G &O	Br-L	Spic	Ross	Str	P	Aut	Br-L	4	Wis	2R	49.5	L4IHV	471	170	8100	34x7	34x7D
Indiana 220	22000	4560	Con	H	6	4⅜x4¾	427.5	45.9	100@2400	C	G &O	Br-L	Spic	Ross	Str	P	Aut	Br-L	4	Wis	2R	50.7	L4IHV	546	170	8400	36x8	36x8D
Indiana 250	25000	5950	Con	H	6	4⅜x4¾	427.5	45.9	100@2400	C	Long	Br-L	Spic	Ross	Str	P	Aut	Br-L	4	Tim	Wo	63.7	LT4IHV	664	182	10000	40x8	40x8D
Indiana 290	30000	7250	Con	L	6	4¾x5¾	611.4	54.1	116@1800	C	Long	Br-L	Spic	Ross	Str	P	L-N	Br	7	Tim	Wo	95.0	T4IA	676	182	10750	38x7P	40x14S
*Indiana 640	40000	9700	Con	L	6	4¾x5¾	611.4	54.1	116@1800	C	Long	Br-L	Spic	Ross	Str	P	L-N	Br	7	Tim	Wo	90.9	T4IA	864	212	14000	38x7P	36x10S
International A 1	¾	615	Wak	L	4	3⅝x4½	186.0	21.0	39@2400	G	Mod	Mec	Mec	Ross	Zen	Vac	DR	W-G	4	Own	Sp	39.5	BE4IM	212	136	2930	5.50x20	5.50x20
International A 2	1½	615	Wak	L	4	3⅝x4½	186.0	21.0	39@2400	G	Mod	Mec	Mec	Ross	Zen	Vac	DR	W-G	4	Own	Sp	39.5	BE4IM	212	136	*2935	5.50x20	6.00x20
International B 2	1½	665	Wak	L	4	3⅝x4½	186.0	21.0	39@2400	G	Mod	Mec	Mec	Ross	Zen	Vac	DR	Mec	6	Own	Sp	47.3	BE4IM	212	136	2960	5.50x20	6.00x20
International A L 3	1½	1450	Lyc	L	6	3¼x4½	224.0	25.3	54@2700	G	Mod	Own	Mec	Ross	Zen	Vac	DR	W-G	4	Own	Sp	42.9	B4IM	295	138	4032	20x6.00	20x6.00D
International A 3	1½	795	Lyc	L	6	3¼x4½	224.0	25.3	54@2700	G	Mod	Rock	Mec	Ross	Zen	P	DR	W-G	4	Own	Sp	33.8	BE4IM	287	136	3500	6.00x20	6.00x20
International A 3½	1½	1250	Lyc	L	6	3¼x4½	224.0	25.3	54@2700	G	Mod	Rock	Mec	Ross	Zen	P	DR	W-G	4	Own	Sp	34.9	BE4IM	302	136	3700	6.00x20	6.00x20D
International A 4	2	1750	Own	H	6	3⅝x4½	279.0	31.5	67@2600	G	Mod	Own	Mec	Ross	Zen	Vac	DR	Own	5	Own	Sp	47.8	BE4IM	378	145	5221	32x6	32x6D
International A 5	3	2350	Own	H	6	3⅝x4½	279.0	31.5	67@2600	G	Mod	Own	Mec	Ross	Zen	Vac	DR	Own	5	Own	Sp	52.6	BE4IM	430	156	5895	34x7	34x7D
International A 6	3	2675	Own	H	6	3⅝x4½	279.0	31.5	67@2600	G	Mod	Own	Mec	Ross	Zen	Vac	DR	Own	5	Own	Sp	62.5	BE4IM	430	156	6120	34x7	34x7D
International W 1	2½	3850	Hall	H	4	4½x5½	312.0	28.9	59@2000	C	Own	Own	Own	Own	Zen	Vac	RB	Own	5	Own	2R	60.5	BE4IM	710	148	8300	36x5S	36x8S
International W 3	3½	4850	Hall	H	4	4¾x5½	390.0	36.1	69@2000	C	Own	Own	Own	Own	Zen	Vac	RB	Own	5	Own	2R	70.5	BE4IM	794	160	10125	36x6S	40x12S
International A 7	5	6200	Own	H	6	4½x5½	525.0	48.6	117@2200	G	Mod	Rock	Mec	Ross	*Zen	P	DR	Own	5	Own	2 R	52.3	BO4IM	730	123	11250	9.75x20	9.75x20D
International A 8	5	6300	Own	H	6	5 x5½	650.0	60.0	136@2100	G	Mod	Rock	Mec	Ross	*Zen	P	DR	Own	5	Own	2 R	52.3	BO4IM	730	123	11250	9.75x20	9.75x20D
La France Rep. A 1	6000	795	Lyc	L	6	3 x4¾	201.5	21.5	60@2500	G	G&O	Borg	Spic	Han	Zen	Vac	Aut	Ful	4	Tim	Sp	36.1	L4IH	378	132	3000	20x5.50	32x6
La France Rep. C 1	7500	1295	Lyc	L	6	3¼x4½	224.0	25.4	61@2750	G	G&O	Borg	Spic	Han	Zen	Vac	Aut	Ful	4	Tim	Sp	35.8	L4IH	413	144	3300	20x6.00	32x6
La France Rep. D 1	9000	1595	Lyc	L	6	3¼x4½	224.0	25.4	61@2750	G	G&O	Borg	Spic	Han	Zen	Vac	Aut	Ful	4	Tim	Sp	37.9	L4IH	448	144	3725	30x5	30x5D
La France Rep. E-1	13000	1985	Bud	L	6	3½x4½	260.0	29.5	69@2600	G	Per	Borg	Spic	Ross	Zen	Vac	Aut	Ful	4	Tim	Sp	47.0	L4IHV	578	162	5000	20x7.50	20x7.50D
La France Rep. F-3	15000	2395	Lyc	L	6	3¾x4½	299.0	33.7	80@2500	G	Per	Ful	Spic	Ross	Zen	P	Aut	Ful	4	Tim	Sp	50.6	L4IHV	656	174	5625	34x7	34x7D
La France Rep. H 2	16000	2985	Lyc	L	6	3⅞x5	354.0	36.0	85@2300	G	Per	Ful	Spic	Ross	Zen	P	Aut	Ful	4	Wis	2R	41.6	L4IHV	658	174	6370	34x7	34x7D
La France Rep. H-3	18000	3395	Bud	L	6	4⅛x4¾	393.0	42.1	94@2400	G	Per	Ful	Spic	Ross	Zen	Vac	Aut	Ful	4	Tim	2R	54.0	L4IHV	768	179	——	20x9.75B	20x9.75DB
La France Rep. M 2	20000	4000	Wak	L	6	4⅜x5⅛	462.0	46.0	97@2000	G	Per	Ful	Spic	Ross	Zen	P	Aut	Ful	5	Wis	2R	51.0	L4IHV	768	174	7500	36x8	36x8D
La France Rep. M-3	22000	4750	Wak	L	6	4⅜x5⅛	462.0	46.0	97@2000	G	Per	Ful	Spic	Ross	Zen	P	Aut	Ful	5	Tim	2R	62.5	L4IHV	768	191	——	20x10.50B	20x10.50DB
La France Rep. 35-2	24000	5600	Wak	L	6	4½x5¾	549.0	48.6	98@1850	G	Own	Ful	Spic	Ross	Zen	P	Aut	Ful	4	Wis	2R	45.4	L4IHV	870	174	9250	38x9	38x9D
La France Rep. 35-2	28000	5900	Wak	L	6	4⅝x5⅛	517.0	51.0	100@1800	G	Per	Ful	Spic	Ross	Zen	P	Aut	Ful	4	Tim	2R	111.5	W4IA	1054	191	——	24x10.50B	24x10.50DB
Maccar 36 A	1½	1900	Bud	L	6	3¾x4½	298.0	33.7	83@2800	G	Per	Br-L	Spic	Ross	Str	P	DR	Br-L	4	Tim	Sp	30.6	L4IH	315	171	4850	32x6	32x6D
Maccar 40 A	2	2400	Bud	L	6	3¾x4½	298.0	33.7	83@2800	G	Per	Br-L	Spic	Ross	Str	P	DR	Br-L	4	Tim	Sp	38.8	L4IHV	325	171	5340	32x6	32x6D
Maccar 56	3	3350	Bud	L	6	3¾x5	311.0	33.7	72@2100	G	Per	Br-L	Spic	Ross	Str	Vac	DR	Br-L	4	Wis	2 R	37.4	L4IHV	411	183	6200	34x7	34x7D
Maccar 60	3	3950	Bud	L	6	4⅛x5⅛	411.0	40.8	103@2100	G	Per	Br-L	Spic	Ross	Str	Vac	DR	Br-L	4	Tim	Wo	34.3	L4IHV	411	183	6600	20x9.00	20x9 00D
Maccar 66 A	4	5500	Her	L	6	4⅝x4¾	479.0	51.3	106@2100	G	Per	Br-L	Spic	Ross	Zen	Vac	DR	Br-L	7	Tim	Wo	64.5	W4IA	617.5	206	8200	20x9.75	20x9.75D
Maccar 86 A	5	5950	Her	L	6	4⅝x4¾	479.0	51.3	106@2100	G	Per	Br-L	Spic	Ross	Zen	Vac	DR	Br-L	7	Tim	Wo	72.3	W4IA	623	206	9500	20x10.50	20x10.50D
†Maccar SW-86	10	8250	Her	L	6	4⅝x5¼	529.0	51.3	124@2200	G	Per	Br-L	Spic	Ross	Zen	Vac	DR	Br-L	5	Tim	Wo	72.3	T6IA	103	206	11700	20x10.50	20x10.50D
††Mack B L	——	2500	Own	L	6	3¼x5	248.9	25.3	63@2800	G	Own	Own	Spic	Gem	Str	Vac	NE	Own	4	Tim	Sp	Opt	L4IH	302	148	*4450	20x6.00B	20x6.00DB
††Mack B G	——	3000	Own	L	6	3⅝x5	309.6	31.5	75@2600	G	Own	Own	Spic	Own	Str	Vac	NE	Own	4	Own	Sp	Opt	O4IV	415	156	5200	32x6	32x6D
††Mack A B	——	4350	Own	L	4	4¼x5	283.7	28.9	60@2200	G	Own	Own	Spic	Own	Str	Gra	NE	Own	4	Own	2 R	Opt	O4IV	471	146½	7100	34x7	34x7D
Mack A B	——	4000	Own	L	4	4¼x5	283.7	28.9	60@2200	G	Own	Own	Spic	Own	Str	Vac	NE	Own	4	Own	Ch	Opt	O4IV	471	146½	6850	34x7	34x7D
Mack A B	——	4500	Own	L	6	3⅝x5	309.6	31.5	75@2600	G	Own	Own	Spic	Own	Str	Gra	NE	Own	4	Own	2 R	Opt	O4IV	471	146½	7050	34x7	34x7D
††Mack A B	——	4150	Own	L	6	3⅝x5	309.6	31.5	75@2600	G	Own	Own	Spic	Own	Str	Vac	NE	Own	4	Own	Ch	Opt	O4IV	471	146½	6850	34x7	34x7D
††Mack B C	——	5250	Own	L	6	4 x5½	417.7	38.4	100@2300	G	Own	Own	Spic	Own	Str	Vac	NE	Own	4	Own	2 R	Opt	O4IV	471	154	8350	36x8	36x8D
††Mack B C	——	5500	Own	L	6	4 x5½	417.7	38.4	100@2300	G	Own	Own	Spic	Own	Str	Vac	NE	Own	4	Own	Ch	Opt	O4IV	610	154	8500	36x8	36x8D
††Mack B J	——	6150	Own	L	6	4½x5½	525.2	48.6	126@2200	G	Own	Own	Spic	Own	Str	Vac	L-N	Own	4	Own	2 R	Opt	O4IV	567	168½	10100	36x8	36x8D
††Mack A K	——	5150	Own	L	4	5 x6	471.2	40.0	77@1800	G	Own	Own	Spic	Own	Str	Gra	RB	Own	4	Own	Ch	Opt	O4IV	492	162	9800	36x5S	36x5DS
††Mack A K	——	5250	Own	L	4	5 x6	471.2	40.0	77@1800	G	Own	Own	Spic	Own	Str	Gra	RB	Own	4	Own	2 R	Opt	O4IV	492	162	9700	36x5S	36x5DS
††Mack A C	——	4950	Own	L	4	5 x6	471.2	40.0	77@1800	G	Own	Own	Spic	Own	Str	Gra	RB	Own	4	Own	Ch	Opt	OJXM	194	156	9500	36x5S	40x5DS
††Mack A K	——	6450	Own	L	6	4½x5½	525.5	48.6	126@2200	G	Own	Own	Spic	Han	Str	Vac	L-N	Own	4	Own	2 R	Opt	O4IV	492	174	10950	22x10.50B	22x10.50DS
††Mack A C	——	5500	Own	L	4	5 x6	471.2	40.0	77@1800	G	Own	Own	Spic	Own	Str	Gra	RB	Own	4	Own	Ch	Opt	OJXM	194	156	10100	36x6S	40x6DS
††Mack A C	——	6550	Own	L	6	4½x5½	525.5	48.6	126@2200	G	Own	Own	Spic	Han	Str	Vac	L-N	Own	4	Own	Ch	Opt	O4IV	492	174	11950	24x10.50B	24x10.50DB
††Mack A C	——	6000	Own	L	4	5 x6	471.2	40.0	77@1800	G	Own	Own	Spic	Own	Str	Gra	RB	Own	4	Own	Ch	Opt	OJXM	194	156	10450	36x7S	40x7DS
††Mack A P	——	9500	Own	L	6	5 x6	706.5	60.0	150@2000	G	Own	Own	Spic	Own	Str	Gra	NE	Own	4	Own	Ch	Opt	O2IV	287	191	12200	36x7S	40x8DS
††Mack A K 6—6 wheel	——	9500	Own	L	6	4½x5½	525.2	48.6	126@2200	G	Own	Own	Spic	Own	Str	Vac	L-N	Own	4	Own	2 R	Opt	O6IA	574	152-52	16300	9.75x22B	5.75x22DB
††Mack A C 6—6 wheel	——	7650	Own	L	4	5 x6	471.2	40.0	77@1800	G	Own	Own	Spic	Own	Str	Gra	RB	Own	4	Own	Ch	Opt	ORIV	574	125-52	13800	36x6S	40x12S
††Mack A C 6—6 wheel	——	9000	Own	L	6	4½x5½	525.2	48.6	126@2200	G	Own	Own	Spic	Own	Str	Vac	L-N	Own	4	Own	Ch	Opt	O6IA	574	145-52	14950	40x8	40x8D
Mack A P 6 wheel	——	11500	Own	L	6	5 x6	706.5	60.0	150@2000	G	Own	Own	Spic	Own	Str	Gra	NE	Own	4	Own	Ch	Opt	O6IA	574	145-52	15250	40x8	40x8D
††Mack A P 6 wheel	——	12000	Own	L	6	5 x6	706.5	60.0	150@2000	G	Own	Own	Spic	Own	Str	Gra	NE	Own	4	Own	2 R	Opt	O6IA	574	145-52	——	22x9.75B	22x9.75B
Pierce-Arrow P T	12000	2950	Own	L	6	3¾x4½	298.0	33.5	70@2600	G	Long	Long	Cle	Han	Zen	P	DR	Cla	4	Tim	Sp	——	B4IMV	388	160	*5600	20x7.50B	20x7.50B
Pierce-Arrow P W	18000	4150	Own	L	6	4⅛x4½	361.0	40.3	77@2400	G	Long	Long	Cle	Han	Zen	P	DR	Cov	4	Tim	*Wo	——	W4IA	488	150	6660	20x9.00B	20x9.00B
Pierce-Arrow P X	24000	5375	Own	L	6	4⅝x4¾	479.0	51.3	103@2200	G	Long	Long	Cle	Han	Zen	P	DR	Cov	4	Tim	*Wo	——	W4IA	610	160	9300	20x10.50B	20x10.50B
Pierce-Arrow P Y	28000	5950	Own	L	6	4⅝x4¾	479.0	51.3	103@2200	G	Long	Long	Cle	Han	Zen	P	DR	Cov	4	Own	*Wo	——	W4IA	701	160	10875	24x10.50B	24x10.50B
Pierce-Arrow P Z	34000	6950	Own	L	6	4¾x5¾	611.0	54.1	130@2000	G	Long	Long	Cle	Han	Zen	P	DR	Own	4	Own	*Wo	——	W4IA	702	168	12800	36x7B	40x16B
Relay Series 15 AA	¾	1370	Con	L	6	3⅜x4	214.7	27.3	52@2200	C	Long	Borg	Blo	Han	Str	Vac	Aut	W-G	4	Own	2 R	38.4	L4IH	297	131	3750	30x5P	30x5P
Relay Series 15 AB	1	1400	Con	L	6	3⅜x4	214.7	27.3	52@2200	C	Long	Borg	Blo	Han	Str	Vac	Aut	W-G	4	Own	2 R	38.4	L4IH	297	131	3800	30x5P	30x5P
Relay Series S 11	1	1700	Bud	L	6	3⅜x4½	241.6	27.3	53@2200	G	Long	Br-L	Blo	Han	Zen	Vac	Aut	Br-L	4	Own	2 R	25.5	L4IH	297	142	4050	30x5P	30x5P
Relay Series S 11	1½	1900	Bud	L	6	3⅜x4½	241.6	27.3	53@2200	G	Long	Br-L	Blo	Han	Zen	Vac	Aut	Br-L	4	Own	2 R	30.0	L4IH	297	162	4500	30x5P	30x5DP
Relay 40 CA	1½	3040	Bud	L	6	3¾x5	331.0	33.7	64@2100	G	Long	Ful	Blo	Han	Zen	Vac	Aut	Ful	4	Own	2 R	41.8	L4IH	394	168	5550	34x5P	34x5DP
Relay 40 CB	2	3290	Bud	L	6	3¾x5	331.0	33.7	64@2100	G	Long	Ful	Blo	Han	Zen	Vac	Aut	Ful	4	Own	2 R	41.8	L4IH	394	168	5750	36x6P	36x6DP
Relay Series 50	2	3860	Bud	L	6	3¾x5	331.0	33.7	64@2100	G	Long	Br-L	Blo	Han	Zen	Vac	Aut	Br-L	5	Own	2 R	58.5	L4IH	584	161	6800	36x6	36x6D
Relay Series S 11	2	2030	Bud	L	6	3⅜x4½	241.6	27.3	53@2200	G	Long	Br-L	Blo	Han	Zen	Vac	Aut	Br-L	4	Own	2 R	30.0	L4IH	297	162	4700	32x6P	32x6DP
Relay 40 CC	2½	3325	Bud	L	6	3¾x5	331.0	33.7	64@2100	G	Long	Ful	Blo	Han	Zen	Vac	Aut	Ful	4	Own	2 R	41.8	L4IH	394	168	5950	36x6P	36x6DP
Relay Series 50	2½	4000	Bud	L	6	3¾x5	331.0	33.7	64@2100	G	Long	Br-L	Blo	Han	Zen	Vac	Aut	Br-L	5	Own	2 R	58.5	L4IH	584	161	7000	36x6	38x7D
Relay Series 60	2½	4555	Bud	L	6	4⅛x5⅛	410.9	40.8	83@2100	G	Long	Ful	Blo	Han	Zen	Vac	Aut	Ful	5	Own	2 R	58.5	L4IH	584	175	7350	36x6	36x6D
Relay Series 50	3	4130	Bud	L	6	3¾x5	330.0	33.7	64@2100	G	Long	Br-L	Blo	Han	Zen	Vac	Aut	Br-L	5	Own	2 R	58.5	L4IH	584	161	7200	36x6	40x8D
Relay Series 60	3	4595	Bud	L	6	4⅛x5⅛	410.9	40.8	83@2100	G	Long	Ful	Blo

Major Specifications and Mechanical Details of 1932 Commercial Cars

(CONTINUED FROM PAGE 9)

Make and Model	Capacity—Tons or Lbs.	Chassis Price	Engine	Valve Arr'g'm't	No. of Cyls.	Bore and Stroke	Piston Disp.	Tax H. P.	Max. Brake H. P. and Peak R. P. M.	Type Camshaft Drive	Radiator Make	Clutch Make	Universals Make	Steering Gear Make	Carburetor Make	Fuel Feed Type	Make Electr'l System	Transmission	No. Spds. For.	Rear Axle Make	Type Final Drive	Final Gear Reduction	Type Service Brakes	Area Service Brakes	Standard Wheel Base	Chassis Wgt.	Standard Tire Sizes Front	Rear
Service Series S 11	1	1600	Bud	L	6	3⅜x4½	241.6	27.3	53@2200	G	Long	Br-L	Blo	Han	Zen	Vac	Aut	Br-L	4	Col	Sp	25.5	—	—	142	3900	30x5P	30x6P
Service Series S 11	1½	1900	Bud	L	6	3⅜x4½	241.6	27.3	53@2200	G	Long	Br-L	Blo	Han	Zen	Vac	Aut	Br-L	4	Tim	Sp	29.2	L4IH	297	162	4300	30x5P	30x5DP
Service Series 40	1½	2990	Bud	L	6	3⅜x5	331.0	33.7	64@2100	G	Long	Ful	Blo	Han	Zen	Vac	Aut	Ful	4	Tim	Wo	34.8	L4IH	394	168	4700	34x5P	34x5DP
Service Series S 11	2	2030	Bud	L	6	3⅜x4½	241.6	27.3	53@2200	G	Long	Br-L	Blo	Han	Zen	Vac	Aut	Br-L	4	Tim	Sp	29.2	L4IH	297	162	4500	32x6	32x6D
Service Series 40	2	3240	Bud	L	6	3⅜x5	331.0	33.7	64@2100	G	Long	Ful	Blo	Han	Zen	Vac	Aut	Ful	4	Tim	Wo	34.8	L4IH	394	168	4900	36x6	36x6D
Service Series 40	2	3240	Bud	L	6	3⅜x5	331.0	33.7	64@2100	G	Long	Ful	Blo	Han	Zen	Vac	Aut	Ful	4	Tim	Wo	34.8	L4IH	394	168	5100	36x6P	36x6D
Service Series 40	2½	3240	Bud	L	6	3⅜x5	331.0	33.7	64@2100	G	Long	Ful	Blo	Han	Zen	Vac	Aut	Ful	4	Tim	Wo	34.8	L4IH	394	168	5100	36x6P	36x6D
Service Series 60	2½	4580	Bud	L	6	4⅛x5⅛	410.9	40.8	83@2100	G	Long	Ful	Blo	Han	Zen	Vac	Aut	Ful	5	Tim	Wo	63.0	L4IH	584	175	7000	36x8	36x6D
Service Series 60	3	4680	Bud	L	6	4⅛x5⅛	410.9	40.8	83@2100	G	Long	Ful	Blo	Han	Zen	Vac	Aut	Ful	5	Tim	Wo	63.0	——	——	175	7100	36x6	38x7D
Service Series 80	3½	5250	Bud	L	6	4⅛x5⅛	411.0	40.8	83@2100	G	Long	Borg	Blo	Ross	Zen	Vac	Aut	Br-L	7	Tim	Wo	98.2	——	——	175	8200	36x6S	36x12S
Service Series 80	4	5330	Bud	L	6	4⅛x5⅛	411.0	40.8	83@2100	G	Long	Own	Blo	Ross	Zen	Vac	Aut	Br-L	7	Tim	Wo	98.2	——	——	175	8400	36x6S	36x14S
Service Series 100	5	5830	Bud	L	6	4½x5⅛	410.9	40.8	83@2100	G	Long	Own	Blo	Ross	Zen	Vac	Aut	Br-L	7	Tim	Wo	95.0	——	793	175	9600	36x6S	40x14S
Sterling FB-30	1½	795	Con	L	6	3⅜x4	214.7	28.0	72@3300	C	Per	Borg	Spic	Ross	Zen	P	DR	War	4	Tim	St	37.6	L4IH	269	142	3300	20x6.50B	20x6.50B
Sterling FB-45	2	1485	Con	L	6	3⅜x4⅝	248.0	28.0	66@3000	C	Per	Borg	Spic	Ross	Zen	P	DR	War	4	Cla	St	36.2	L4IH	228	159	4230	20x6.50B	20x6.50DB
Sterling FB-55	2-2½	1850	Con	L	6	3⅜x4⅝	248.0	28.0	66@3000	C	Per	Br-L	Spic	Ross	Zen	P	DR	Br-L	4	Tim	St	36.3	L4IHV	282	159	4950	20x7.00B	20x7.00DB
Sterling FB-65	2½	2450	Wak	L	6	3¾x4¾	315.0	33.7	72@2500	G	Mod	Own	Spic	Ross	Zen	P	DR	Own	4	Tim	St	39.1	L4IHV	330	174	5550	20x7.50B	20x7.50DB
Sterling FB-80	3	3080	Wak	L	6	3¾x4¾	315.0	33.7	72@2500	G	Mod	Own	Spic	Han	Zen	P	DR	Own	4	Tim	St	49.5	L4IHV	392	174	6480	20x8.25B	20x8.25DB
Sterling FD-80	3	3275	Wak	L	6	4 x4¾	358.0	38.4	80@2500	G	Mod	Own	Spic	Han	Zen	P	DR	Own	5	Wis	2R	55.7	L4IHV	396	174	6680	20x8.25B	20x8.25DB
Sterling FW & FD 97	3½	4225	Wak	L	6	4⅛x4¾	381.0	40.8	85@2500	G	Mod	Own	Spic	Ross	Zen	P	DR	Own	4	Tim	Wo	51.6	L4IHV	664	192	7955	36x8P	36x8DP
Sterling FW & FD 97 S	3½	4490	Wak	L	6	4⅛x5⅛	462.0	45.9	102@2400	G	Mod	Own	Spic	Ross	Zen	P	DR	Own	4	Tim	Wo	51.6	L4IHV	664	192	8200	36x8P	36x8DP
Sterling F C 100	3½	4950	Wau	L	6	4½x4¾	381.0	40.8	85@2500	G	Mod	Own	Spic	Ross	Zen	P	DR	Own	4	Own	—	56.3	O2IMV	466	174	7480	20x9.00B	20x9.00DB
Sterling FC 90	4	4200	Wak	L	6	4⅛x4¾	381.0	40.8	85@2500	G	Mod	Own	Spic	Han	Zen	P	DR	Own	4	Own	—	56.3	L4IHV	664	192	7955	36x8P	36x8DP
Sterling FW & FD 97	4	4225	Wak	L	6	4⅛x4¾	381.0	40.8	85@2500	G	Mod	Own	Spic	Ross	Zen	P	DR	Own	4	Tim	Wo	51.6	L4IHV	664	192	8200	36x8P	36x8DP
Sterling FW & FD 97 S	4	4490	Wak	L	6	4⅛x5⅛	462.0	45.9	102@2400	G	Mod	Own	Spic	Ross	Zen	P	DR	Own	4	Tim	Wo	51.6	L4IHV	664	192	8750	40x8P	40x8DP
Sterling FW & FD 115	4	4805	Wak	L	6	4⅛x5⅛	462.0	45.9	102@2400	G	Mod	Own	Spic	Ross	Zen	P	DR	Own	4	Tim	Wo	54.6	L4IHV	664	192	8750	40x8P	40x8DP
Sterling FC-105	4	5150	Wak	L	6	4⅛x5⅛	411.0	40.8	91@2400	G	Mod	Own	Spic	Ross	Zen	P	DR	Own	4	Own	—	61.2	O2IMV	562	192	8000	20x9.00B	20x9.00DB
Sterling FC-107	4	5200	Wak	L	6	4⅛x5⅛	462.0	45.9	102@2400	G	Mod	Own	Spic	Ross	Zen	P	DR	Own	4	Own	—	54.6	O2IMV	576	192	8200	36x8P	36x8DP
Sterling FC-120 S	4	5650	Wak	L	6	4⅛x5⅛	462.0	45.9	102@2400	G	Mod	Own	Spic	Ross	Zen	P	DR	Own	4	Own	—	57.6	O2IMV	658	192	8400	20x9.75B	20x9.75DB
Sterling FC-120	4-5	5350	Wak	L	6	4⅛x4¾	381.0	40.8	85@2500	G	Mod	Own	Spic	Ross	Zen	P	DR	Own	4	Own	—	62.2	O2IMV	500	192	8550	40x8P	40x8DP
Sterling FW & FD 115	5	4805	Wak	L	6	4⅛x5⅛	462.0	45.9	102@2400	G	Mod	Own	Spic	Ross	Zen	P	DR	Own	4	Own	Wo	54.6	L4IHV	664	192	8750	40x8P	40x8DP
Sterling FW & FD 140	5	6070	Wak	L	6	4⅛x5⅛	462.0	45.9	102@2400	G	Mod	Own	Spic	Ross	Zen	P	DR	Own	4	Tim	Wo	66.6	WS4IA	690	192	10500	40x8P	42x9DP
Sterling FC-135	5	5825	Wak	L	6	4⅛x5⅛	462.0	45.9	102@2400	G	Mod	Own	Spic	Ross	Zen	P	DR	Own	4	Own	—	62.2	O2IMV	500	193	8900	40x8P	40x8DP
*Sterling F C S 170	—	10210	Wau	L	6	4½x5¾	489.0	43.4	90@2000	G	Mod	Own	Spic	Ross	Zen	P	DR	Own	4	Own	—	63.2	WS4IA	792	—	14100	36x8P	36x8DP
*Sterling F C S 180	—	10405	Wau	L	6	4½x5¾	549.0	48.6	99@2000	G	Mod	Own	Spic	Ross	Zen	P	DR	Own	4	Own	—	59.6	WS4IA	792	—	14550	40x8P	40x8DP
*Eterling F C S 210	—	10825	Wau	L	6	5 x5¾	677.0	60.0	125@2000	G	Mod	Own	Spic	Ross	Zen	P	DR	Own	4	Own	—	59.6	WS4IA	792	—	14750	40x8P	40x8D
Stewart 30	1	695	Lyc	L	4	3¾x4½	199.0	22.5	50@2600	G	Fed	Borg	Spic	Ross	Str	P	DR	W-G	4	Sal	Sp	35.1	B4IM	—	130	*3158	20x6.50	20x6.50
Stewart 30 X	1	795	Lyc	L	6	3 x4¾	201.5	23.8	60@2800	G	Fed	Borg	Spic	Ross	Str	P	DR	W-G	4	Sal	Sp	35.1	B4IM	—	130	3199	20x6.50	20x3.50
Stewart 40 X A	1½	995	Lyc	L	6	3¼x4½	224.0	25.3	62@2600	G	Fed	Borg	Spic	Ross	Zen	P	DR	W-G	4	Sal	Sp	35.1	B4IM	—	145	3574	20x6.50	20x6.50D
Stewart 50X	2	1195	Lyc	L	6	3⅜x4½	242.0	27.3	65@2800	G	Fed	Borg	Spic	Ross	Zen	P	DR	W-G	4	Cla	Sp	45.1	B4IM	—	145	5194	20x7.00	20x7.00D
Stewart 29 X S	2	1695	Lyc	L	6	3¾x4½	298.0	33.7	85@2750	G	Own	Ful	Spic	Ross	Str	P	DR	Ful	4	Cla	Sp	44.1	B4IM	—	165	6552	20x7.00	20x7.00D
Stewart 32 X	2½	1990	Lyc	L	6	3¾x4½	298.0	33.7	85@2750	G	Mod	Ful	Spic	Ross	Str	P	DR	Ful	4	Cla	Sp	46.1	B4IM	—	170	6170	20x7.50	20x7.50DB
Stewart 58-8	2½	2390	Lyc	L	8	3⅜x4½	322.0	36.5	100@2800	G	Fed	Ful	Spic	Ross	Str	P	DR	Ful	4	Cla	Sp	46.1	B4IM	—	165	6245	20x7.50	20x7.50D
*Stewart 18 X	2½	2690	Lyc	L	6	3⅞x5	310.0	36	85@2750	G	Own	Ful	Spic	Ross	Str	P	DR	Ful	4	Tim	Wo	48.1	B4IM	—	165	6864	20x8.25	20x8 25D
Stewart 36 X	3	2990	Lyc	L	6	3⅞x5	354.0	36.2	90@2750	G	Fed	Borg	Spic	Ross	Str	P	DR	Br-L	4	Tim	Wo	105.1	B4IM	—	170	6750	8.25x20B	8.25x20DB
Stewart 48-8	3	2990	Lyc	L	8	3¾x4¾	420.0	45.0	130@2800	G	Fed	Br-L	Spic	Ross	Str	P	DR	Br-L	4	Cla	Sp	46.1	B4IM	—	165	7474	20x9.00	20x9.00D
Stewart 19 X	3½	3690	Lyc	L	6	3⅞x5	354.0	36.2	90@2750	G	Mod	Ful	Spic	Ross	Str	P	DR	Ful	12	Tim	Wo	105.1	B4IM	—	165	7474	20x9.00	20x9.00D
Stewart 38-8	3½	3990	Lyc	L	8	3¾x4¾	462.0	45.0	130@2800	G	Fed	Borg	Spic	Ross	Str	P	DR	Br-L	12	Tim	2R	105.1	B4IMV	—	170	7984	20x9.00	20x9.00D
Stewart 38-6	3½	3990	Wak	L	6	4⅜x5⅛	420.0	45.9	100@2000	G	Fed	Borg	Spic	Ross	Str	P	DR	Br-L	12	Tim	2R	105.1	B4IMV	—	170	7984	20x9.00	20x9.00D
Stewart 31 X	5	5190	Wak	L	6	4⅜x5⅛	516	51.2	105@2000	G	Mod	Br-L	Spic	Ross	Str	P	DR	Br-L	12	Tim	Wo	105.1	B4IMV	—	165	9885	20x9.75	20x9.75D
Stewart 27 X S	7	6190	Wak	L	6	4⅜x5⅛	516	51.2	105@2000	G	Own	Br-L	Spic	Ross	Str	P	DR	Br-L	12	Tim	Wo	105.1	W4I	—	165	10762	24x10.50	24x10.50D
Studebaker	1½	695	Own	L	6	3¼x4⅝	230.2	25.4	75@3200	—	McC	Long	Spic	Ross	Str	P	DR	WG	4	Cla	Sp	36.2	B4IM	—	130	——	20x6.00	32x6
Studebaker	1½	775	Own	L	6	3¼x4⅝	230.2	25.4	75@3200	—	McC	Long	Spic	——	Str	P	DR	WG	4	Cla	Sp	36.2	B4IM	—	165	——	20x6.00	32x6
Studebaker	2	895	Own	L	6	3¼x4⅝	230.2	25.4	75@3200	—	McC	Long	Cle	Ross	Str	P	DR	WG	4	Tim	Sp	43.5	B4IM	—	141	——	20x6.50	20x6.50D
Studebaker	2	920	Own	L	6	3¼x4⅝	230.2	25.4	75@3200	—	McC	Long	Cle	Ross	Str	P	DR	WG	4	Tim	Sp	43.5	B4IM	—	153	——	20x6.50	20x6.50D
Studebaker	2	945	Own	L	6	3¼x4⅝	230.2	25.4	75@3200	—	McC	Long	Cle	Ross	Str	P	DR	WG	4	Tim	Sp	43.5	B4IM	—	165	——	20x6.50	20x6.50D
Studebaker	3	1350	Own	L	6	3¼x4⅝	230.2	25.4	75@3200	—	McC	Long	Mec	Ross	Str	P	DR	WG	8	Tim	Sp	—	B4IMV	—	141	——	20x6.50	32x6D
Studebaker	3	1375	Own	L	6	3¼x4⅝	230.2	25.4	75@3200	—	McC	Long	Mec	Ross	Str	P	DR	WG	8	Tim	Sp	—	B4IMV	—	153	——	20x6.50	32x6D
Studebaker	3	1400	Own	L	6	3¼x4⅝	230.2	25.4	75@3200	—	McC	Long	Mec	Ross	Str	P	DR	WG	8	Tim	Sp	—	B4IMV	—	165	——	20x6.50	32x6D
Studebaker	3	1425	Own	L	6	3¼x4⅝	230.2	25.4	75@3200	—	McC	Long	Mec	Ross	Str	P	DR	WG	8	Tim	Sp	—	B4IMV	—	183	——	20x6.50	32x6D
**White 60 K	8500	2200	Own	L	6	3½x4½	260.0	29.4	50@1800	C	—	Own	Mec	Han	Zen	Vac	DR	Own	3	Own	Sp	11.6	L4IH	276	112	——	20x7.00B	20x7.00B
White 161	*9000	1700	Own	L	4	4 x5¾	289.0	25.6	45@1800	G	—	Own	Mec	Han	Zen	Vac	DR	Own	4	Own	Sp	19.5	L4IH	276	138	4290	20x7.00B	20x7.00DB
White 601	9000	1850	Own	L	6	3½x4½	260.0	29.4	54@2100	C	—	Own	Mec	Han	Zen	Vac	DR	Own	4	Own	Sp	19.5	L4IH	276	138	4000	20x7.50B	20x7 50B
White 602	10000	2050	Own	L	6	3½x4½	260.0	29.4	54@2100	C	—	Own	Mec	Han	Zen	Vac	DR	Own	4	Own	Sp	19.5	L4IH	276	138	4050	20x7.00B	20x7.00DB
White 162	*10000	1900	Own	L	4	4 x5¾	289.0	25.6	45@1800	G	—	Own	Mec	Han	Zen	Vac	DR	Own	4	Own	Sp	19.5	L4IH	276	138	4260	20x7.50B	20x7 50B
White 611	*11500	2450	Own	L	6	3¾x4½	299.0	33.7	66@2100	C	—	Own	—	Han	Zen	Vac	DR	Own	4	Own	Sp	23.4	L4IH	349	148	4960	36x4S	36x7S
White 211	*11500	2300	Own	L	4	4 x5¾	289.0	25.6	45@1800	G	—	Own	Spic	Han	Zen	Vac	DR	Own	4	Own	Sp	23.4	L4IH	349	148	5110	20x7.00B	20x7.00DB
White 212	*13000	2650	Own	L	4	4 x5¾	289.0	25.6	45@1800	G	—	Own	Spic	Han	Zen	Vac	DR	Own	4	Own	Sp	23.4	L4IH	349	148	5230	20x7.00B	20x7.00DB
White 612	*13000	2800	Own	L	6	3¾x4½	299.0	33.7	66@2100	C	—	Own	—	Han	Zen	Vac	DR	Own	4	Own	Sp	23.4	L4IH	349	149	5295	20x7.50B	20x7.50DB
White 620	*15000	4350	Own	H	6	4 x5¼	396.0	38.4	82@1800	C	Own	Own	Spic	Ross	Zen	P	DR	Own	4	Own	Sp	41.8	OL4IHV	—	157	7430	20x8.25B	20x8.25DB
White 51 A	*17000	3750	Own	L	4	4½x5¾	326.0	28.9	54@1600	G	Own	Own	Spic	Own	Zen	Vac	Eis	Own	4	Own	Sp	35.6	O21M	335	170	6438	36x5	36x8S
White 621	*18000	4650	Own	H	6	4 x5¼	396.0	38.4	82@1800	C	Own	Own	Spic	Ross	Zen	P	DR	Own	4	Own	Sp	41.4	OL4IHV	—	157	7700	20x9.00B	20x9.00DB
White 640	*20000	6100	Own	H	6	4⅜x5¾	519.0	45.9	108@1800	C	Own	Own	Spic	Ross	Zen	P	L-N	Own	4	Own	Sp	33.9	O4IA	—	180	9200	20x9.00B	20x9 00DB
White 639	*20000	5000	Own	H	6	4 x5¼	396.0	38.4	82@1800	C	—	Own	Spic	Ross	Zen	P	DR	Own	4	Own	Sp	41.4	O4IHV	554	168	8500	20x9.00B	20x9.00DB
White 58	*22000	4400	Own	L	4	4½x5¾	326.0	28.9	54@1600	G	Own	Own	Spic	Own	Zen	Vac	Eis	Own	4	Own	2R	49.7	OPXM	224	190	7797	36x5	36x58D
White 641	*24000	6450	Own	H	6	4⅜x5¾	519.0	45.9	108@1800	C	Own	Own	Spic	Ross	Zen	P	L-N	Own	4	Own	2R	46.9	O4IA	—	180	9700	20x9.75B	20x9.75DB
*White 630 SW200	*24000	6289	Own	H	6	4 x5¼	396.0	38.4	82@1800	C	—	Own	—	Ross	Zen	P	DR	Own	4	Tim	Wo	44.2	OTIHV	—	193	10600	20x8.25B	20x8.25DB
White 631	*24000	5750	Own	H	6	4 x5¼	396.0	38.4	82@1800	C	Own	Own	Spic	Ross	Zen	P	DR	Own	4	Own	2R	56.9	O4IHV	—	168	9060	20x9.25B	20x9.25DB
White 643	*32000	6950	Own	H	6	4⅜x5¾	519.0	45.9	108@1800	C	Own	Own	Spic	Ross	Zen	P	L-N	Own	4	Own	2R	66.5	O4IA	—	180	10900	24x10.50B	24x10.50DB
*White 642 SW310	*34000	8045	Own	H	6	4⅜x5¾	519.0	45.9	108@1800	C	—	Own	Spic	Ross	Zen	P	L-N	Own	4	Tim	Wo	55.6	OTIA	—	193	12670	20x9.00B	20x9.00DB
White 642	*28000	6750	Own	H	6	4⅜x5¾	519.0	45.9	108@1800	C	Own	Own	Spic	Ross	Zen	P	L-N	Own	4	Own	2R	66.5	O4IA	—	180	10600	24x9.75B	24x9.75DB
*White 643 SW410	*40000	8570	Own	H	6	4⅜x5¾	519.0	45.9	108@1800	C	—	Own	Spic	Ross	Zen	P	L-N	Own	4	Tim	Wo	69.1	OTIA	—	198	14400	40x8	40x8D
Willys-Overland 6-C-113	½	415	Own	L	6	3¼x3⅞	193.0	25.3	65@3400	C	Fed	Own	Spic	Own	Til	P	Aut	Own	3	Own	Sp	12.4	B4IM	143	113	1923	20x5.50	32x6
Willys-Overland 6-C-131	1½	595	Own	L	6	3¼x3⅞	193.0	25.3	65@3400	C	Fed	Own	Spic	Own	Til	P	Aut	W-G	4	Cla	Sp	40.8	B4IM	235	131	2625	20x5.50	32x6
WillysOverland 6-C-157	1½	635	Own	L	6	3¼x3⅞	193.0	25.3	65@3400	C	Fed	Own	Spic	Own	Til	P	Aut	W- G	4	Cla	Sp	40.8	B4IM	235	157	2900	19x5.00	19.x5.00

GENERAL NOTATIONS

*†**REFERENCE MARKS** apply to individual lines only and explanations are given under the subdivision for each company in the "SPECIAL NOTATIONS."

CAPACITIES given in this table are in tons or fractions of tons. *Shows maximum allowable gross weight in pounds.

ENGINE—Bud, Buda; Con, Continental; Her, Hercules; Lyc, Lycoming; Pont, Pontiac; Wak, Waukesha; Wis, Wisconsin; Hall, American Car & Foundry.

VALVE ARRANGEMENT—L, "L" head; H, in head; O, overhead; S, sleeve.

TYPE OF CAMSHAFT DRIVE—G, gear; C, chain.

RADIATOR MAKE—C&O, G & O Mfg. Co.; Per, Perfex Corp.; Long, Long Mfg. Co.; Har, Harrison Radiator Corp.; Fed, Fedders Mfg. Co.; McC, McCord Radiator & Mfg. Co.; Mod, Modine Mfg. Co.; Hex, Hexcel Radiator Co.

CLUTCH MAKE—Jon, Jones Clutch & Gear Co.; Ful, Fuller & Sons Mfg. Co.; Borg, Borg & Beck Co.; Br-L, Brown Lipe Gear Co.; Rock, Rockford Drill & Machine Co.; Cov, Covert Gear Co.; Long, Long Mfg. Co.; Detr, Detroit Gear & Machine Co.; Mer, Merchant & Evans; Hel, Merchants & Evans.

UNIVERSALS MAKE — Spic, Spicer Mfg. Co.; Blo, Blood Bros. Machine Co.; Sup, Superior Universal Products; Un, Universal Products Co.; Cle, Cleveland Steel Products Corp.; Pet, Peters; Opt, Optional; Mec, Mechanics Machine Co.

STEERING GEAR MAKE—Ross, Ross Gear & Tool Co.; Han, Hannum Mfg. Co.; Sag, Saginaw Steering Gear Co.; Gem, Gemmer Mfg. Co.; Col, Columbus Gear Pump Co.; W-G, Warner Gear Corp.

CARBURETOR—Car, Carter; Mar, Marvel; Sch, Wheeler-Schebler; Str, Stromberg; DL, Detoit Lubricator; Til, Tillotson; Zen, Zenith-Detroit.

FUEL FEED—Gra, gravity; Vac, vacuum tank; P, fuel pump.

ELECTRICAL SYSTEM — AB, American-Bosch; Aut, Electric Auto-Lite; Eis, Eisemann; L-N, Leece-Neville; NE, North East; RB, Robert Bosch; DR, Delco-Remy.

TRANSMISSION—Br-L, Brown-Lipe; Cov, Covert; Ful, Fuller; Mec, Mechanics Machine; Mun, Muncie; W-G, Warner Gear; Cot, Cotta Gear Co.; Cla, Clark Equipment Co.

REAR AXLE—Cla, Clark Equipment; Col, Columbia; Eat, Eaton; Pont, Pontiac; Sal, Salisbury; Tim, Timken; Wis, Wisconsin.

FINAL DRIVE—IG, internal gear; St, straight bevel; Sp, spiral bevel; Wo, worm; 2R, double reduction; Ch, chain; S-T, semi-transverse.

TYPE OF SERVICE BRAKES—B4IM, Bendix, 4 wheel, internal mechanical; B4MV, Bendix, 4 wheel, mechanical, vacuum; B6IA, Bendix, 6 wheel, internal, air; B4IMV, Bendix, 4 wheel, internal, mechanical, vacuum; BO4IMV, Bendix, own, 4 wheel, internal, mechanical, vacuum; BrIA, Bendix, operating on 4 rear wheels, internal air; BW4IM, Bendix front, Wisconsin rear, 4 wheel, internal, mechanical; BE4IM, Bendix front, Eaton rear, 4 wheel, internal, mechanical; B4IH, Bendix, 4 wheel, internal, hydraulic.

CB4IM, Columbia, Bendix, 4 wheel, internal, mechanical; C4IM, Columbia, 4 wheel, internal, mechanical; K2IM, Clark, 2 wheel, internal, mechanical; CR4IA, Christensen-Relay, 4 wheel internal, air.

L4IHVA, Lockheed, 4 wheel, internal, hydraulic, vacuum, air; LO4ID, Lockheed, own, 4 wheel, internal, drive shaft; LO4IV, Lockheed, own, 4 wheel, internal, vacuum; LT4DV, Lockheed, Timken, 4 wheel, drive shaft, vacuum; L4IH, Lockheed, 4 wheel, internal, hydraulic; L4IHA, Lockheed, 4 wheel, internal, hydraulic, air; L4IHV, Lockheed, 4 wheel, internal, hydraulic, vacuum; LT4IHV, Lockheed, Timken, 4 wheel, internal, hydraulic, vacuum LT4IVA, Lockheed, Timken, 4 wheel, internal, vacuum, air; L6IHV, Lockheed, 6 wheel, internal, hydraulic, vacuum; L6IH, Lockheed, 6 wheel, internal, hydraulic.

O2IM, Own, 2 wheel, internal, mechanical; O2IV, Own, 2 wheel, internal, vacuum; O4IA, Own, 4 wheel, internal, air; O4IH, Own, 4 wheel, internal, hydraulic; O4IHV, Own, 4 wheel internal, hydraulic, vacuum; O4IM, Own, 4 wheel, internal, mechanical; O4IV, Own, 4 wheel, internal, vacuum; O4M, Own, 4 wheel, mechanical; O2XM, Own, 2 wheel, external, mechanical; O4XM, Own, 4 wheel external, mechanical; O6IA, Own, 6 wheel, internal, air; OJXM, Own, jack shaft, external, mechanical; OL4IHV, Own, Lockheed, 4 wheel, internal, hydraulic, vacuum; OPX, Own, propeller shaft, external; OPXM, Own, propeller shaft, external, mechanical; OPM, Own, propeller shaft, mechanical; ORIV, Own, rear wheels, internal, vacuum; OTIHV, Own, Timken, internal, hydraulic, vacuum.

S4IM, Steeldraulic, 4 wheel, internal, mechanical.

T4rIA, Timken, operating on 4 rear wheels, internal, air; T4IA, Timken, 4 wheel, internal, air; T6IA, Timken, 6 wheel, internal, air; T2IMV, Timken, 2 wheel, internal, mechanical, vacuum.

W4I, Westinghouse, 4 wheel, internal; W4IA, Westinghouse, 4 wheel, internal, air; W6IA, Westinghouse, 6 wheel, internal, air; 4IA, 4 wheel, internal, air; 4IH, 4 wheel, internal, hydraulic; 4M, 4 wheel, mechanical.

WHEEL BASES given are standard, but optional wheel bases are available in many cases.

***CHASSIS WEIGHT** according to Automotive Daily News formula, which is the chassis with gas, oil, water and spare tire, but without cab or other equipment.

TIRES—B, balloon; D, dual; S, solid; P, pneumatic.

SPECIAL NOTATIONS

AMERICAN-LA FRANCE

Balloon tires optional Big Chief models.

AUTOCAR

†Engines in these models are located under the driver's seat.

*Six-wheeler.

BROCKWAY

*Six-wheelers.

CHEVROLET

Utility model availale on 131-inch wheel base with chassis weight of 2,760 pounds and equipped with dual rear wheels.

DAY ELDER

*Six-wheeler.

Additional standard wheel bases are available on different models as follows:

60....156	160....165, 180, 204	
75....156	240....204, 220, 232	
85....156, 168	285....204, 220, 232	
110....168, 186	345....204, 220, 232	
130....169, 186, 187, 199	402....204, 220, 232	

DIAMOND T

*Six-wheelers.

Additional standard wheel bases available as follows:—

551....158	750....167, 192		
504....166½	801....180½, 199¼		
506....174	1200....174½, 180		
603....157, 179	1600....174½, 180		
606....177½	1601....184		

DODGE

*Models F40, F41, F61 and F62 can be had with double drop frame.

FWD

*Indicates six-wheel model.

The BTL and BT models are special line construction trucks in which complete provision for mounting AT and T earth boring machine, winch, body and other line construction accessories is included in the standard chassis.

Special power take-off transmission, which provides 3 power take-offs which may be operated in any transmission speed, optional on all models.

FEDERAL

*Six-wheelers.

*Also rated in pounds of total allowable weight as follows:—

D 3	8,500	T 10 W	18,000
E 2	8,500	T 10 D R	18,000
F 7	10,000	U 6	20,000
A 6	13,500	U 6 D R	20,000
A 6 T	15,000	A 6 S W	18,500
A 6 T W	15,000	C 7	24,000
D 2 S W	12,500	C 8	24,000
E 2 S W	12,500	X 8	30,000
D 3 D	12,500	X 8 D R	30,000
E 2 D	12,500	X 8 R	30,000
T 10 B	18,000	X 8 R D R	30,000

†Solid tires standard, no spare rim or tir

GRAMM

Series	Straight Rating	Wheel Base	Pay Load Range
AX 4	8,000	157	1 to 1½ tons
AX 6	8,000	157	1 to 1½ tons
BX 4	10,000	157	1½ to 2 tons
BX 6	10,000	157	1½ to 2 tons
CX 4	12,000	157-180

EARLY IMPROVEMENT IN MISSOURI SECTOR EXPECTED BY DEALERS

(Continued from Page 7)

est than they have in years." He reported that most of the present owners of Packards in this district plan to make trades this spring to obtain the latest improvements.

Winston H. Spurgeon, secretary and treasurer of the R. & S. Motor Sales Company, district distributors of Chevrolet products and one of the largest and most successful motor car agencies in the district, bemoaned the fact that an uneasy used car market made it imperative for his firm to go slow on trades.

"Dozens of sales could be made," he pointed out, "if the company could give the buyer what he wants for his used machine. The field is overflowing with prospects this year as never before. People have gone on driving the old bus as long as they feel they wisely can. This spring is the time to trade and will see many trades made."

The R. & S. Company has had a satisfactory increase in sales during January as a result of the widespread buying interest which followed the New York show. Local displays of Chevrolet attract crowds of visitors to the showrooms, and the new cars won the admiration of many motorists, officials of the company say. They are well pleased with prospects for the year and are optimistic concerning the possibility of an outstanding sales record.

The Farmer Auto Sales and Service Company, representative for Hudson products, reported there is more interest in Hudson cars for 1932 than in several years. Prospects are considered better than in the last three or four years. Increased sales already this month have provided an encouraging note for the business, especially since several deals were closed without the necessity of a trade. Improvement in the repair business also has been noted. Displays of the Hudson cars attracted twenty times more visitors this year than last.

Ralph B. Davis, manager of the Simons-Wiles Company, distributor of Buick motor cars in the district, announced that increased sales followed the initial showing of new Buicks in Joplin. The new year "looks good to us," Davis said, "and prospects are excellent for placing a record number of new cars."

A noticeable change for the better in the motor car industry was predicted by Davis, who regards the nation wide interest in the New York shows as indicative of a renewed interest in new automobiles and their ownership.

Improvement in prospects was seen by officers of the Davis-Cadillac Company, dealer for Cadillac and Oldsmobile motor cars. While new models of Cadillacs have not been received here yet, advance information on them has brought many nice comments from prospective purchasers. Several orders for Oldsmobiles, which already are on the floor, have been placed. The company is planning its annual sale of used cars to make way for the trades which will accompany the sale of new Cadillacs.

While the new Hupmobiles for 1932 have not yet arrived here, the Norton Motor Company, district distributor, already has taken several orders and has lined up an increasing number of good prospects. Many inquiries at the Norton dealership regarding the new products followed first announcements of the 1932 machines.

A noticeable pickup in January sales was reported by the Browning-Reo Company, dealer in Reo cars and trucks. Sales for the last few months have been fairly good, the manager announced, and prospects for the spring are encouraging.

R. G. Kagey, president of Kagey, Inc., distributor for Ford products in this district, announced that although his company had not yet brought out a new creation for 1932 he anticipated a material increase in sales for the year because of the low average in 1931. Few people have been spending any money on their cars, he said, and there must be a break some time.

The Marold Motor Company, newly appointed distributor for Studebaker and Rockne, started the year without a stock of used cars on hand, and as a result is not handicapped in the race to take advantage of the increasing prospects for sales. Officials of the company regard the coming year as one of the most important for Studebaker line because of the addition of the Rockne cars, which will give them competitive products with cars in virtually every class. Several sales already have been closed this month and additional trades are promised within the next few weeks. The year is considered a bright and opportune one by the Marold Company.

Only one or two dealers in the Joplin district voiced pessimistic sentiments regarding the new year. Those whose files already carry records of 1932 sales and whose books list the names of many good prospects see profit and improved business for the next twelve-month period.

NEW RECORD IN ATTENDANCE AT ST. PETERSBURG SHOW

St. Petersburg, Fla., Feb. 4.—St. Petersburg's 1932 automobile show was a pronounced success and set a new record for attendance, according to Harold Boerlin, secretary of the dealers' association. He said attendance on the opening day alone was bigger than for the entire three days last year.

MIDWEST JOBBER ASSOCIATION FORMED

(Continued from Page 1)

the motor and equipment association and will co-operate in the solution of mutual territorial problems Members of each regional association will also belong to the national organization which represents wholesalers in efforts to clarify recognition of the jobber as an important element in the distribution set-up.

B W. Ruark, general manager of the Motor and Equipment Wholesalers Association, announced that formation of the Great Lakes group brings the total number of active regional associations to eleven.

Alfred Reeves, general manager of the N. A. C. C., addressed the group on the taaxtion policy of the N. A. C. C. and related associations, especially applied to the proposed new Federal excise on new automobiles and accessories.

At the conclusion of his talk a resolution was adopted pledging full support to the industry in opposition to the proposed tax.

FOREIGN TRADE OPPORTUNITIES

Washington, D. C., Feb. 4.—Foreign automotive trade opportunities just announced by the automotive division of the Bureau of Foreign and Domestic Commerce of the Department of Commerce are listed below.

Additional information may be obtained from the bureau and its district and co-operative offices by duly registered firms or individuals upon written request, giving the opportunity number.

55768—Carlsbad, Czecho-Slovakia; agency and purchase of automobile accessories and equipment.

55770—Florence, Italy; agency and purchase of automobile accessories and novelties, including brake linings.

55757—Madras, India; agency for automobile accessories and spare parts.

55692—Wellington, New Zealand; agency for automobile gears, pinions, timing gears, engine valves, exhaust and intake, silent and metal timing gears and crown wheels and pinions.

55693—Fortaleza, Brazil; purchase of automobile and truck parts.

NASH ELECTS BLISS TO DIRECTORS' BOARD

(Continued from Page 1)

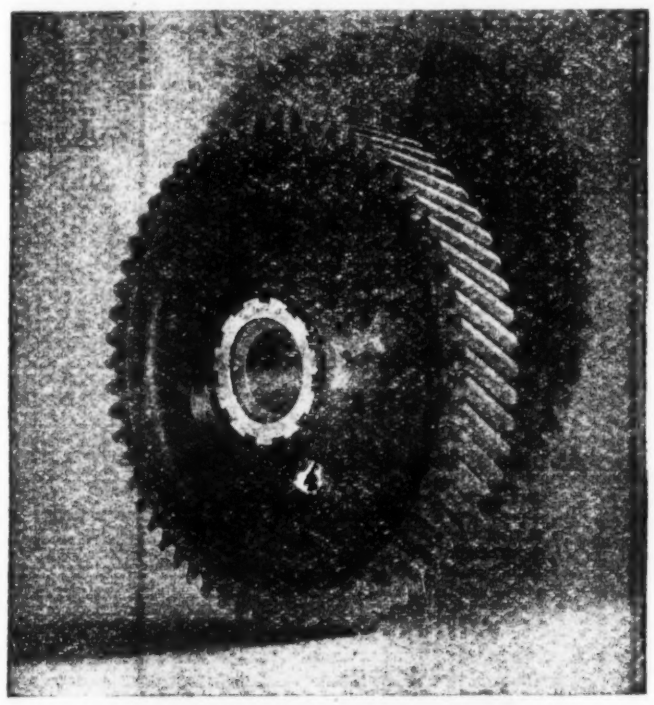
announced at administrative offices here today.

Mr. Bliss, whose swift climb to one of the most commanding merchandising positions in the automobile industry has been an intensely interesting chapter in motor car history, was given this signal mark of recognition at a stockholders' meeting held in the East.

The new directors' activities have not been confined to sales development alone, however. He began his Nash association by entering the factory and gathering a thorough knowledge of actual manufacturing operations.

Later he entered the merchandising end of the business, and advanced through the sales department to positions of assistant sales manager, sales manager and vice-president in charge of all Nash sales.

CLASSIFIED ADVERTISEMENTS IN THE AUTOMOTIVE DAILY NEWS BRING RESULTS



Resilience

40 times that of steel

A NONMETALLIC, highly resilient, nonresonant member between crankshaft and camshaft provides a cushioning and quieting effect. Crankshaft vibrations are minimized, and the engine is "softened" throughout.

This characteristic of high resilience is of great importance in reducing noise ordinarily caused by vibration and is largely responsible for the exceedingly long wear of the gear teeth.

A gear timing drive is a token of conscientious, uncompromising manufacture throughout the car.

TEXTOLITE TIMING GEARS

830-109

GENERAL ELECTRIC

SALES AND ENGINEERING SERVICE IN PRINCIPAL CITIES

Sensation of the Chicago Show!

New

WILLYS-OVERLAND

SIXES AND EIGHTS AND WILLYS-KNIGHTS

Silver Anniversary Models

Willys-Overland Six

for $415 and up

World's Lowest Priced Six

2-passenger Roadster	$415
4-passenger Sport Roadster	595
2-passenger Coupe	515
4-passenger Coupe	545
Coach	515
Sedan	595

Willys-Overland Eight

for $695 and up

World's Lowest Priced Eight

2-passenger Roadster	$695
4-passenger Sport Roadster	975
2-passenger Coupe	745
4-passenger Coupe	775
Sedan	795

Willys-Knight

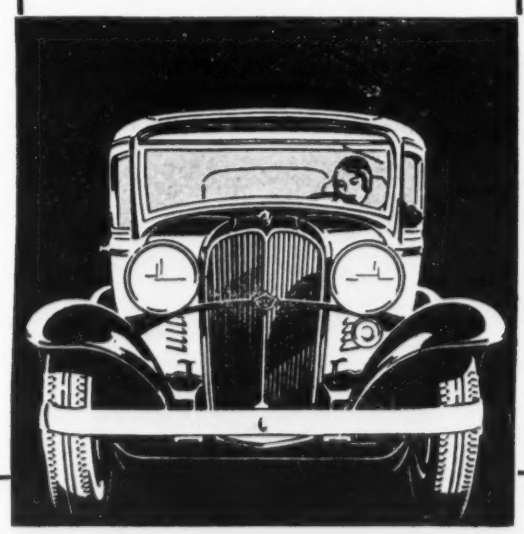
for $745 and up

A Record Low Price for a Knight Car

Coach	$ 745
2-passenger Coupe	745
4-passenger Coupe	775
Sedan	795
Custom Victoria (model 66-D)	1145*
Custom Sedan (model 66-D)	1295*

All prices f. o. b. Toledo, Ohio

*These prices include Free Wheeling, Safety Glass, Bumpers, Six Wire Wheels with Tires, Ride Control—completely equipped



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